Annual Report 2009

Annual analyses of the European air transport market

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Annual Report 2009

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Content

Summary

2009 in a nutshell	WORLD	Source	EUROPE	Source
Passengers	**-0.7%**	ICAO	**-1.7%** **-5.9%** (EU-27)	ICAO Eurostat
Revenue Passenger Kilometres (RPK)	**-1.9%**	ICAO	**-2.4%**	ICAO
Available Seat Kilometres (ASK)	**-2.1%**	ICAO	**-2.4%**	ICAO
Freight tonne-km performed (FTK)	**-10.4%**	ICAO	**-16.6%**	ICAO
Total tonne-km performed*	**-4.3%**	ICAO	**-5.8%**	ICAO
Available Tonne Kilometres (ATK)	**-3.5%**	ICAO	**-5.0%**	ICAO
Aircraft Orders -by Operator area-	**-52.1%**	Ascend	**-12.8%** (Europe) **-34.8%** (EU-27)	Ascend Ascend
TOP Airport -Passengers-	**Atlanta (ATL)** 88 million (-1.9%)	ACI	**London (LHR)** 66 million (-1.5%)	ACI
TOP Airport -Movements-	**Atlanta (ATL)** 962,068 (-0.5%)	ACI	**Paris (CDG)** 518,018 (-6.0%)	ACI
TOP Airport -Freight-	**Memphis (MEM)** 3.7 million tonnes (+0.1%)	ACI	**Paris (CDG)** 1.8 million tonnes (-10.8%)	ACI
TOP Airline -Revenue Passenger Kilometres-	**Air France-KLM** 199,744 (-3.6%)			Ascend
Safety Performance -Fatalities by region of accident-	**954**	Ascend	**44** (Europe) **22** (EU-27)	Ascend Ascend

*including passengers and baggage using formula "1 person equals 100kg"

Air Traffic

On a global scale, the year 2009 was characterised above all by the crisis upon the global business and financial markets, reflecting the turbulences in the air since the latter half of 2008. This crisis had direct consequences upon demand and the market situation in air transport. In comparison with the year 2008, demand for passenger services fell by 1.9% (based upon passengers' kilometres travelled). This decline is the largest since 2002 for the air transport industry, which had been used to a growth of some 5% in prior years. In addition, demand was already stagnant in 2008, so the decline of 1.9% was based upon an already weak initial situation.

The demand for air cargo services in 2009 developed even more dramatically than the demand for passenger services. In this case, the transport volume fell by approximately 7% from approximately 157 billion freight tonne kilometres in 2008 to approximately 141 billion freight tonne kilometres in 2009.

The number of carried passengers in EU-27 declined in 2009 by 5.9%. The international extra-EU transport declined by 3.9% while the international intra-EU transport and the domestic transport decreased by nearly 8%. As was also the case globally, air freight transport in Europe in 2009 declined even more strongly than passenger transport. Thus, the overall volume of loaded freight declined in 2009 by 12.4% from 12.9 million t to 11.3 million t in comparison with the previous year.

Airlines

The airlines' supply, measured by the number of seats offered, was constantly adjusted to the demand expectations in 2009. As in 2008, the Full Service Network Carriers (FNSC) again reduced their capacity offered, this time by 1.9% (2008: -1%). In Europe and North America, supply was reduced by an average of 7%, whereby the slump in demand was of a similar magnitude.

At the forefront, due to varying rates of decline in revenue passenger kilometres, there was a change in favour of the European carrier Air France-KLM which, with just under 200 billion RPKs, is the world's largest airline in 2009. However, FSNC airlines from other regions grew during the crisis (+5.1% ASK), in particular those from the Middle East and China, which demonstrated double-figure growth. Regional carriers increased their capacity by as much as 5%, which was mainly due to an advantageous demand development in the second half-year. The Top 15 Holiday/Charter Carriers demonstrated dramatic supply losses in 2009; capacity sank by more than 14%. In 2008 these groups had already shown losses of a similar magnitude; however, the sector has been considerably altered through mergers and business failures. The market share of the current Top 15 group thus grew considerably in 2009. The Low-Cost Carrier capacity remained approximately at the level of the previous year – in Europe and North America with a slight minus, collectively just into positive figures.

For the 50 largest Full Service Network Carriers globally, the seat load factor was 76.8% in 2009 (-0.1 percentage points – ppts – vs. 2008), of which the therein included European airlines accounted for 77.1% (+0.6 ppts). The 25 largest Low-Cost Airlines achieved a load factor of 77.7% (+1.3 ppts). The European LCCs achieved a comparable 78.2% but sank thereby under the 80% level yardstick reached in 2008. The 25 largest Regional Carriers achieved 77.2% (+0.4 ppts), whereby the slight gain can not be measured against the leap of 8.6 ppts achieved by the two European Regional Airlines in this ranking. The Holiday/Charter Airline business model achieved the highest seat load factor with 84.3% (based on the 15 largest airlines concerned; -2.2 ppts). This ranking is dominated by the European airlines, which managed to achieve a high load factor of 85.9%, despite a moderate reduction of 1.7 ppts compared to 2008.

TOP 20 airlines worldwide

Rank 2009 RPK	Airline	Region	PAX (mill)	change	RPK (mill)	change
1	**Air France-KLM Group**	**EU-27**	**70.3**	**-4.8%**	**199,744**	**-3.6%**
2	American Airlines	North America	85.8	-7.6%	197,079	-7.1%
3	Delta Air Lines	North America	67.9	-5.4%	162,156	-4.7%
4	United Airlines	North America	56.1	-11.2%	161,740	-8.7%
5	Continental Airlines	North America	45.6	-6.4%	128,497	-3.6%
6	**Lufthansa**	**EU-27**	**55.4**	**-2.8%**	**122,511**	**-2.7%**
7	Southwest Airlines	North America	101.4	-0.6%	120,039	+1.3%
8	Emirates Airline	Middle East	25.9	+15.5%	118,284	+17.5%
9	**British Airways**	**EU-27**	**32.3**	**+0.2%**	**112,371**	**+1.4%**
10	Northwest Airlines	North America	41.1	-16.0%	101,341	-12.1%
11	US Airways	North America	51.0	-6.9%	93,193	-4.4%
12	China Southern Airlines	Asia-Pacific	66.3	+13.8%	92,954	+11.8%
13	Cathay Pacific	Asia-Pacific	24.3	-2.6%	88,932	-2.2%
14	Singapore Airlines	Asia-Pacific	16.3	-14.7%	81,552	-12.9%
15	Qantas	Asia-Pacific	22.8	-6.9%	75,580	-7.2%
16	Japan Airlines International	Asia-Pacific	42.0	-10.4%	73,740	-10.2%
17	Air China	Asia-Pacific	39.8	+16.3%	73,369	+11.1%
18	Air Canada	North America	22.2	-4.3%	71,073	-4.9%
19	**Ryanair**	**EU-27**	**65.3**	**+13.2%**	**68,733**	**+10.9%**
20	China Eastern Airlines	Asia-Pacific	44.0	+18.3%	60,917	+13.3%

Sources: Ascend, Airline Business

In 2009, the number of new routes from EU-27 exceeded the number of closed routes by 139. This effect is markedly more pronounced for Low-Cost Carriers (LCCs); here, the difference is 255.

Although the economic crisis happened in 2008, its full impact first reached airlines in 2009. Overall demand – with regard to passenger traffic as well as cargo traffic – decreased and this caused strong turbulences with regard to the financial performance of many European airlines. This applies particularly for the established Full Service Network Carriers. The larger ones

amongst those in Europe had to cope with double-digit declines in revenues during the time span of 2008 to 2009. Resulting from this development, the operating result of these players was mainly signified by negative figures of up to more than € -300 million on average. A little more relaxation could only be seen on the side of the Low-Cost Carriers, which also had to handle declines in revenues and operating results, but were nonetheless partially able to adhere to their growth plans. Nevertheless, the year 2009 was not compatible with the relatively stable financial performance of years prior to 2008. This development could not be balanced by the fallen fuel price, which was remarkably lower in 2009 than in 2008 as a result of the economic crisis and fallen global demand.

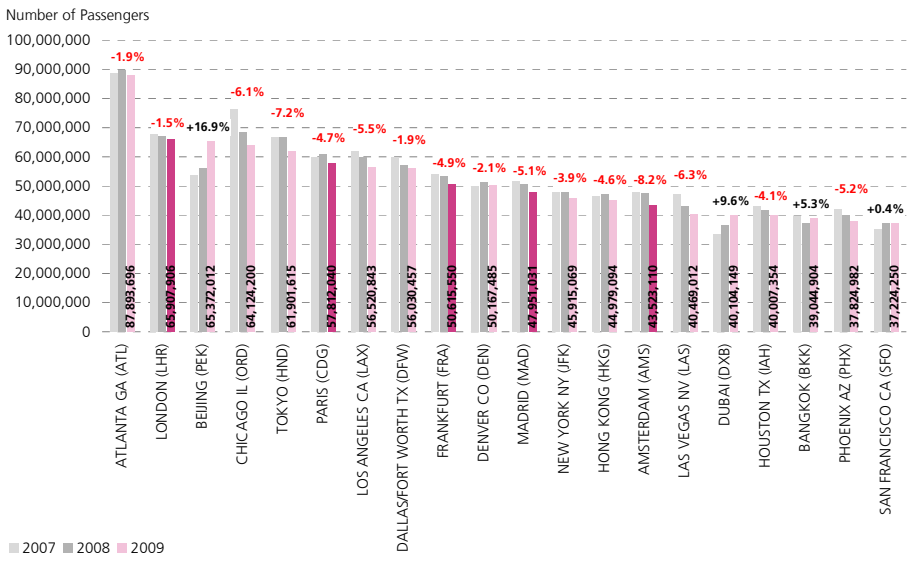
In 2009, all airline alliances reduced their supply of seats offered, ranging from -2.7% for Star Alliance to -6.0% for Oneworld, with Skyteam in between (-4.6%). However, FSNCs not belonging to any airline alliance increased their number of seats offered by 2.0%.

The air cargo industry has seen its worst period in decades. European domestic air freight volume has shown a decline of 9.1%. Intra-EU freight volume was down by about 5.7%, extra-EU freight volume sank by 13.9%. Within a few months, the freight branch lost eight years of growth and with regard to the worldwide transport, volume fell back to the level of the year 2000.

Airports

As reported by the Airports Council International (ACI), 2008 marked a break in the growth in passenger numbers experienced during recent years. Starting with positive results, the year 2008 halted the positive trend in airports' figures. This trend continued until the middle of 2009, so that there were in 2009 about 54 million commercial passenger aircraft movements worldwide, which is around 4% less than in 2008. Within the second half year of 2009, most airports registered positive growth rates against same quarters the year before.

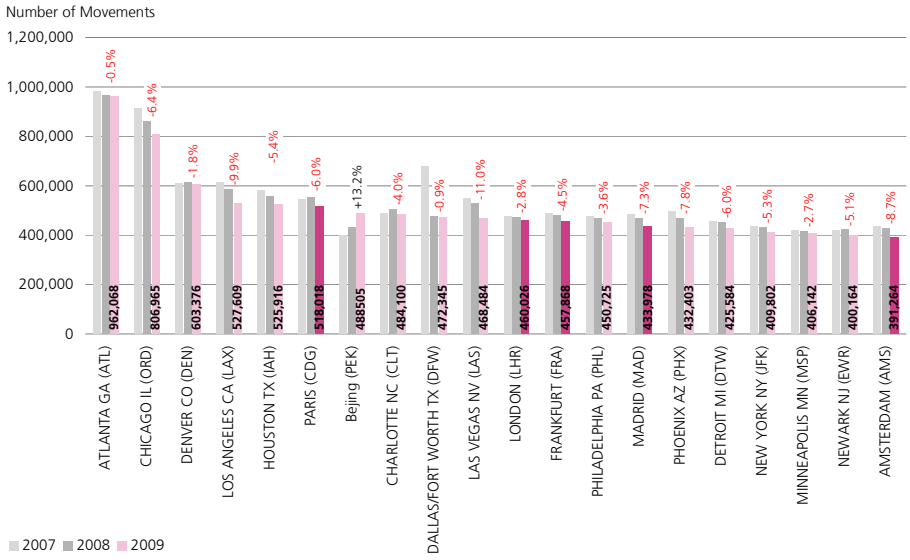
Source: ACI 2010



The Top 20 airports worldwide ranked by passenger numbers are made up of five EU, eleven US and four Asian airports. The two busiest airports worldwide are still the US airport Atlanta Hartsfield-Jackson International and, this time in second place, London Heathrow.

The largest European airport in terms of passenger numbers is London Heathrow. The traffic growth rates for the five largest EU airports within the world Top 20 were all negative: traffic was between 1.5% (London Heathrow) and 8.2% (Amsterdam Schiphol) lower than in 2008.

The Top 20 in terms of commercial aircraft movements is dominated by US and European airports (14 and five airports respectively, only one Asian airport). The two largest airports worldwide are, once again, the US airports Atlanta Hartsfield-Jackson International and Chicago O'Hare International. The largest European airport is Paris Charles De Gaulle, which appears in seventh place worldwide, followed by London Heathrow in twelfth place. Of the five European airports, London Heathrow shows the smallest decline in aircraft movements (-2.8%) while Amsterdam Schiphol has a decrease of 8.7%.



Source: ACI 2010

Forecasts

In 2009, long-term forecasts were published by the regional aircraft manufacturers Bombardier and Embraer and the engine manufacturer Rolls Royce, as well as the forecasts from the aircraft manufacturers Airbus and Boeing. The economic crisis, beginning in 2008, was partly mentioned in the forecasts; however, it generally had no effect on the results of the long-term analysis, as economic cycles were considered to have been accounted for. Starting from a comparable basis of 4,600 billion PKM in 2008, the average annual growth through to 2028 varies by only 0.2% between Boeing and Airbus. While Airbus assumes an average annual growth of 4.7% throughout the given period, Boeing assumes 4.9%.

Eurocontrol published a Short-Term and a Medium-Term Forecast in 2009. From 2009 to 2010, a growth of 1.7% is expected for IFR movements, allowing a forecast margin of 4.4 to 5.5%. The expected growth differs considerably regionally, as already experienced in the past. In the Medium-Term Forecast, three scenarios were presented: Eurocontrol assume for the forecast period from 2009 to 2015 an average yearly growth in flight movements of 2.0% in the Baseline Scenario, 3.4% in the High and 0.5% in the Low Scenario. In the forecast-year 2015, these growth rates would lead to 10.4 million IFR movements in the Low, 11.6 million in the Baseline, and 12.8 million IFR movements in the High Scenario.

Regulatory

Due to the negative effects of the global economic and financial crisis for air carriers, Regulation (EC) No 545/2009 on common rules for the allocation of slots at Community airports came into force at the end of June 2009 to ensure that the non-utilisation of slots allocated for the summer 2009 scheduling period does not cause air carriers to lose their entitlement to those slots. As a temporary measure, it will help airlines cut costs by allowing them to cut capacity more easily at busy airports, knowing that their slots will be safeguarded for the next summer season 2010. In order to react to further effects of the crisis, the Commission shall continue to analyse the impact of the economic crisis on the air transport sector and could make a proposal to renew the arrangements contained in this Regulation for the winter 2010/2011 scheduling period. Such a proposal should be preceded by a full impact assessment.

In 2009, the Commission further implemented the European external aviation policy in order to bring air services agreements in line with Community law and to create new economic opportunities for the air transport industry. To ensure competition and a level playing field for all stakeholders, the Commission was also engaged in several cases concerning state aid, merger control and antitrust and set common principles for the levying of airport charges at Community airports.

The reform of the European air traffic control system aims to meet the challenge of large increases in air traffic expected in the coming years. It also aims to increase safety and reduce costs, delays and the impact of air traffic on the environment. This policy was also pursued in 2009.

In February 2009, the EU Directive for the inclusion of international aviation into the EU Emissions Trading Scheme for the limitation of CO_2 emissions came into force. The European Commission aims to improve the quality of the environment by counteracting the growing impact of aviation on climate change. Therefore, aviation will be included in the existing EU Emissions Trading Scheme by the year 2012. From 2012 onwards, the EU Emissions Trading Scheme will cover virtually all flights departing from or arriving in the EU.

Based on Regulation (EC) No 2111/200577 ("list of banned airlines"), the European Commission, in close cooperation with the authorities responsible in the Member States, has the

right to ban operators from operating in EU airspace, should international safety standards be violated. At the end of 2009, all carriers from Angola (with the exception of TAAG's restricted services into Lisbon), Benin, the Democratic Republic of Congo, Djibouti, Equatorial Guinea, Gabon (except for selected aircraft of Gabon Airlines, Afrijet and Nouvelle Air Affaires Gabon), Indonesia, Kazakhstan (with the exception of Air Astana operating under restrictions and conditions), Kyrgyzstan, Liberia, the Republic of Congo, Sierra Leone, Sao Tome and Principe, Swaziland and Zambia were blacklisted. In addition, all operations of Air Koryo from the Democratic People's Republic of Korea, Air West from Sudan, Ariana Afghan Airlines from Afghanistan, Siem Reap Airways International from Cambodia and Silverback Cargo Freighters from Rwanda remained on the blacklist. Finally, three more carriers are only allowed to operate under certain restrictions and conditions. These are: Air Bangladesh, Air Service Comores and Ukrainian Mediterranean Airlines.

In January 2010, the European Commission published a report on the application of Regulation (EC) No 2111/2005 as required under Article 14 of the said regulation. The application of the "the list of banned airlines" has demonstrated, on the one hand, that it is a successful tool in contributing to ensure a high level of safety in the Community. On the other hand, it cannot be seen as a blanket cover for the safety performance of airlines. There are, therefore, a number of areas where the European Commission intends to further develop its policy.

Consumer

According to the AEA's data on the winter season 2008/09, which comprises the months November to March, the AEA member airlines achieved a punctuality of 82.3% (arrival) and 83.2% (departure) on inner-European and medium-haul flights. The European Regions Airline Association (ERA) reported a positive trend in departure punctuality figures, which reached 88% (2008: 85%) in 2009. The recovery in punctuality apparently correlates with the reduction in traffic resulting from the decline in demand.

With regard to delays due to Air Traffic Flow Management, it can be seen that 747,108 (7.8%) of all registered flights were delayed. Compared to the previous year, delays caused by ATFM have been reduced by 38.4% on average. Reductions range from an incredible -63% in February to a still enormous -21% in October. The largest contribution to this vast improvement is probably the 6.4% reduction in traffic. In general, the risk of delay rises disproportionally high with increasing traffic and now it can be seen that this phenomenon also applies in reverse.

There are a series of connections within Europe on which air traffic is severely at risk of delays due to Air Traffic Flow Management intervention. The most serious delays generally occur during the summer holiday months. The route from Scandinavia to Greece is regarded as the most affected traffic flow between May and September. Between 37% and 60% of all traffic on this route is subject to capacity-related delays. Despite declining traffic levels (-10% in January) and reductions in ATFM delays, the delays at some airports increased considerably. London

Heathrow, Paris Charles de Gaulle, Frankfurt, Munich, Brussels, Vienna, Geneva, Milan, Madrid and Istanbul airports were particularly affected by such reductions in arrival capacities.

Manufacturers

Due to the global economic recession, 2009 marked a difficult year for airframe and engine manufacturers. Orders for new civil aircraft were more than halved from 1978 aircraft in 2008 to 948 in 2009. Nevertheless, the number of new orders exceeded the figures from 2003 and 2004, when airlines were hit by the aftermath of September 11th. This implies that most airlines are rather optimistic about the business prospects for the near future. Most new orders in 2009 came from European airlines (340 orders in geographical Europe), while in 2008, carriers from the Middle East topped the list (407 orders).

The decline in orders for new aircraft hit Airbus and Boeing almost equally. The two world-leading manufacturers of commercial airplanes had to cope with a decline of about 60% in new orders compared to 2008. Among the smaller manufacturers, ATR and Bombardier increased the number of aircraft sold, mainly as demand for fuel-efficient turboprop aircraft (in the case of ATR) and for a new generation of new regional jets (Bombardier's CSeries) increased. Overall, the order books for all manufacturers of commercial aircraft combined declined to about 8,000 aircraft, down by US$ 70 billion to US$ 876 billion at list prices.

Despite the crisis, deliveries of new commercial aircraft increased year-over-year by 7.2% to 1,250 aircraft. This is mainly attributable to the fact that Boeing was hit by a strike in 2008, which seriously affected the delivery schedule for a large number of aircraft. Additionally, fuel-efficient aircraft are still in demand by airlines globally to replace less efficient jets. Finally, the business model of low-cost airlines, operating with modern aircraft delivered directly from the manufacturer, is thriving not only in Europe and North America, but also at an increasing pace on other continents.

In the segment of business jets, it is not an exaggeration to say that the market almost collapsed in 2009. The number of new orders declined by more than three-quarters compared to 2008 (from 499 down to 124 aircraft) and the number of deliveries fell by almost a third.

Safety

In 2009, the number of fatalities in air transport rose, bringing to an end a decreasing trend which started in 2005. The total number of fatalities amounted to 954, compared to 682 in 2008. The number of hull losses, however, decreased from 102 in 2008 to 73 in 2009. The worst accident of the year happened about 1,000km northeast of Fernando de Noronha, Brazil, over the Atlantic, when an Airbus A330-200 of Air France crashed into the sea on 1st June, killing all 228 people on board. The Air France accident was the first of a series of fatal crashes during summer 2009. Only one month later, on 30th June, an Airbus A310 operated by Yemenia also crashed into the sea, off the northern Coast of Grand Comore. The aircraft was on its way from Sana'a, Yemen, to Moroni, Comoros, operating as Yemenia flight 626 and carrying 153

passengers and crew members, of whom all but one girl died. The third fatal accident with more than 100 fatalities occurred two weeks later, when a Tupolev 154M of Iranian carrier Caspian Airlines crashed in an agricultural field about 120km northwest of Tehran. The aircraft, which had taken off from Tehran's Imam Khomenei Airport (IKA) about 16 minutes before the accident, was on its way to Yerevan and had 168 passengers and crew members aboard.

1 Air traffic

1.1 Global passenger and freight volume

Information on the development of worldwide air traffic is available in the form of traffic statistics published by the International Civil Aviation Organisation (ICAO). The basis for the ICAO statistics is reports from ICAO member states on the air traffic activity of airlines based in their territory. However, some of the data published by the ICAO has to be estimated, since not all of the 190 ICAO member states participate in the survey. The most significant trends are nonetheless considered to be correctly represented, since the major states in terms of air traffic, such as the USA and the EU countries, regularly report to the ICAO on the traffic levels achieved by their airlines.

The ICAO distinguishes between international and national traffic. The combination of both figures is the total traffic. The essential information for the allocation of a flight to the appropriate category is the airline's country of origin and the location of the originating and destination airports. According to the ICAO rules, a flight is classed as international if either the airport of origin or destination (or both) is located outside the territory of the airline's home country. Thus, cabotage, that is transportation of passengers or goods within a country by a foreign airline, is considered as international air traffic. Conversely, a flight by a French airline from Paris to one of France's overseas territories, for example, is considered to be a domestic flight, since the originating and destination airports are both located on the territory of the airline's home country. The ICAO also makes a distinction between scheduled and non-scheduled airlines. According to the ICAO, scheduled airlines are the predominant means of transportation. The following discussion relates only to flights performed by scheduled airlines.

1.1.1 Global passenger volume

The year 2009 was characterised above all by the crisis upon the global business and financial markets. This crisis had direct consequences for both demand and the market situation in air transport. In comparison with the year 2008, demand in passenger transport fell by 1.9% (based upon passengers' kilometres travelled). This decline is the biggest since 2002 for the air transport industry, which had been used to a growth of some 5% in prior years. In addition, demand was already stagnant in 2008, so the decline of 1.9% was based upon an already weak initial situation.

Figure 1-1: Development of the global passenger volume

Source: ICAO 2010

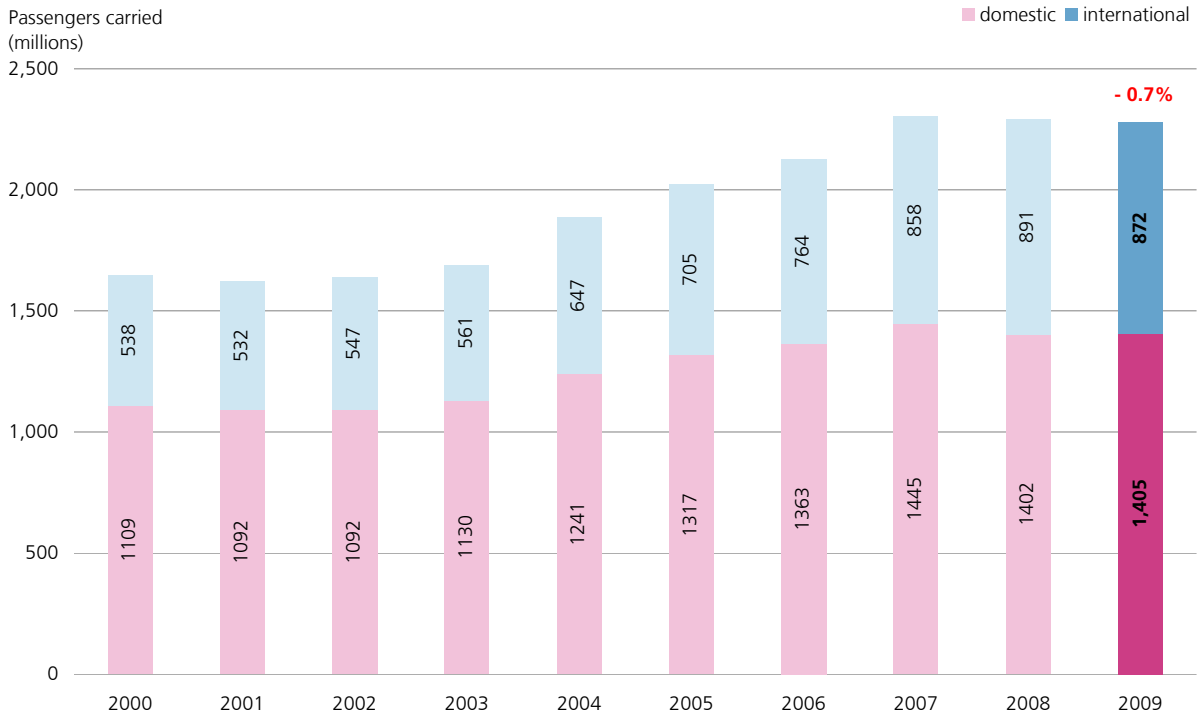
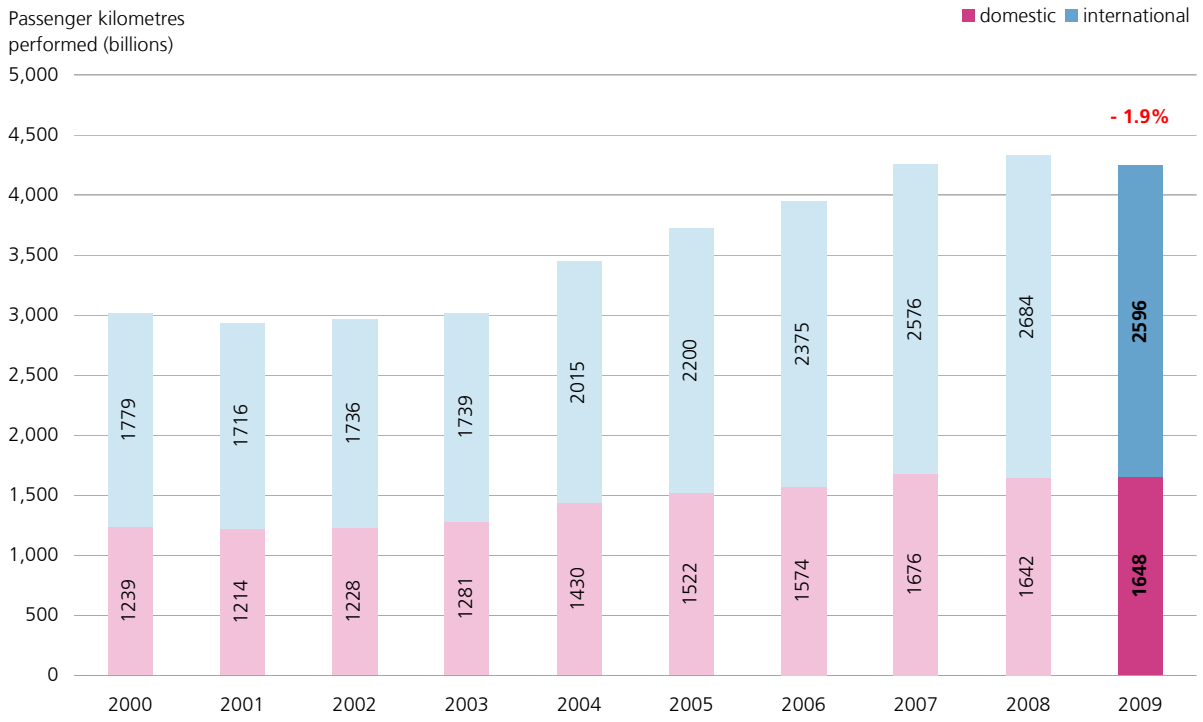


Figure 1-2: Development of the global passenger kilometres

Source: ICAO 2010

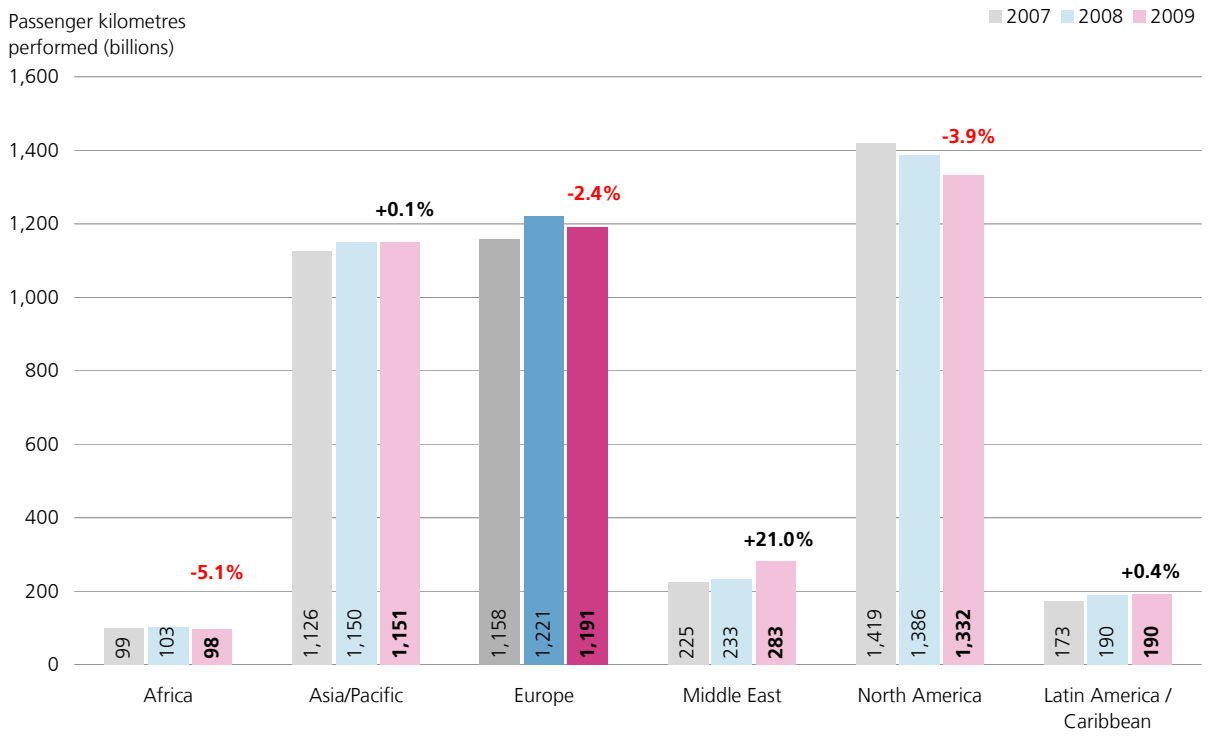


1.1.2 Passenger traffic in the world regions

However, when the individual regions of the world are analysed, substantial differences in the development of demand can be observed. Thus, demand was still increasing in the Middle East regions – even if the initial level was relatively low – by 21% in comparison with the previous year, while it declined or stagnated in all other regions of the world. In the small-volume region of Latin America / Caribbean (+0.4%) as well as in the very strong-volume region of Asia / Pacific (+0.1%), demand grew by a relatively small amount. In the "traditional" growth and voluminous regions of Europe (- 2.4%) and North America (-3.9%), demand declined relatively strongly. These declines correspond to the world's regional differences in economic growth. In these cases, the regions of Europe and North America were also particularly heavily affected by the recession.

Figure 1-3: Development of the global passenger kilometres in the world regions

Source: ICAO 2010



1.1.3 Global freight volume

The demand for air cargo services in 2009 (cf. Fig. 1-4) developed even more dramatically than the demand for passenger services. In this case, the transport volume fell by around 7% from approximately 157 billion freight tonne kilometres in 2008 to approximately 141 billion freight tonne kilometres in 2009. In this regard, it must be kept in mind that the dependency of freight demand is even stronger than in passenger transport. Thus, there was a definite increase in demand in certain passenger market segments, e.g. in the low-cost segment, while the demand for freight correlated directly to the declining international flow of goods.

Figure 1-4: Development of the global freight traffic volume

Source: ICAO 2010

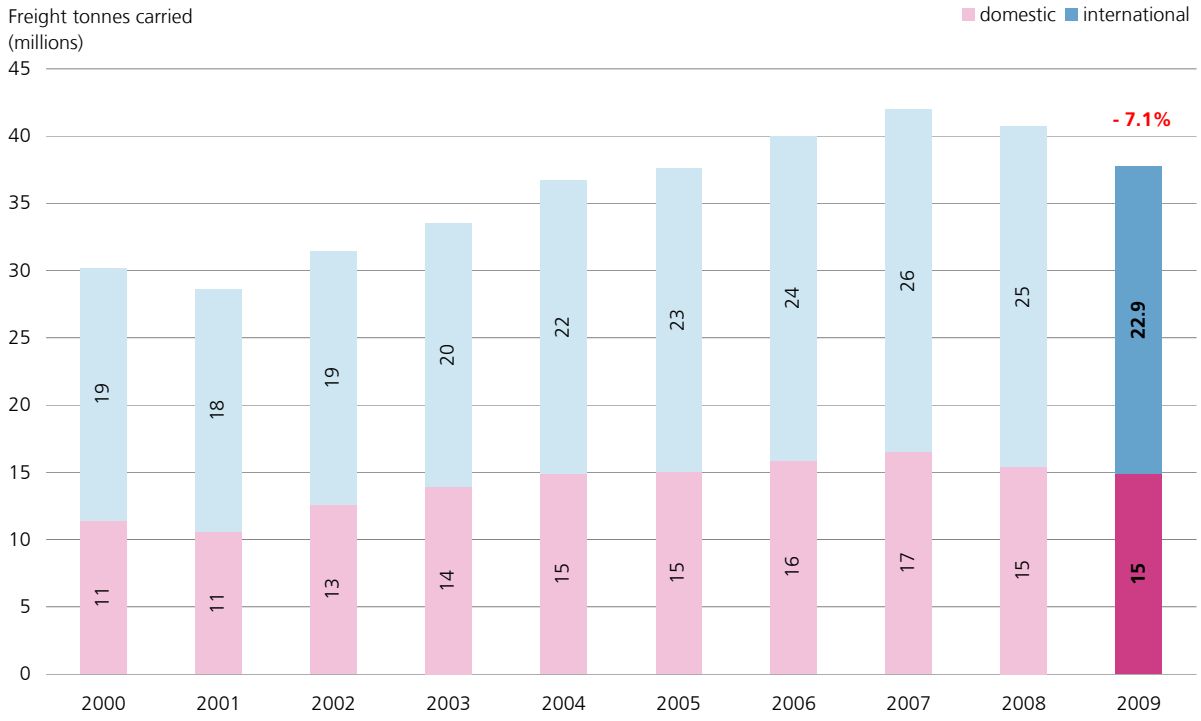
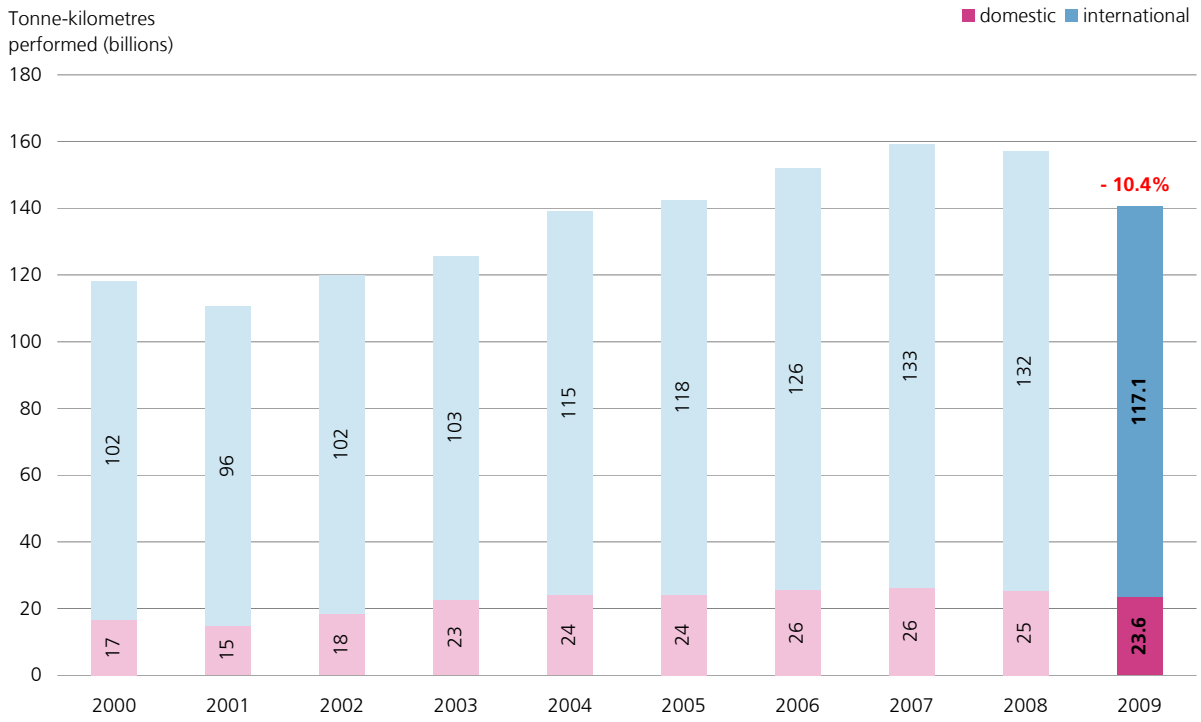


Figure 1-5: Development of the global freight tonne kilometres

Source: ICAO 2010

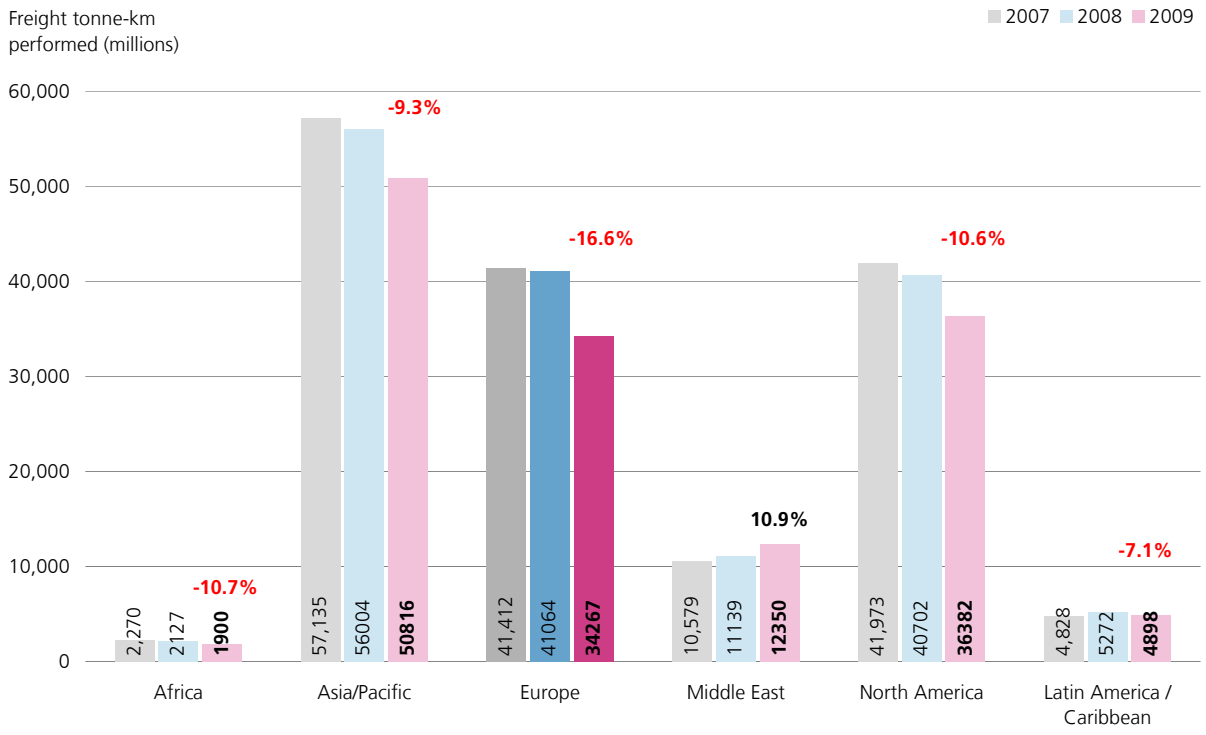


1.1.4 Comparison of freight tonne kilometres of Europe and the other world regions

The volume of the freight tonne kilometres in the world regions are given in Figure 1-6. The same trends can be found in the demand for passenger transport as shown in Figure 1-7.

Figure 1-6: Development of the global freight kilometres in the world regions

Source: ICAO 2010



When analysing the world's regional growth for freight demand, it is again apparent that there was growth only in the Middle East (+10.9%). Indeed, the three large submarkets of North America (-10.6%), Asia/Pacific (-9.3%) and Europe (-16.6%) suffered substantial decreases in demand.

1.2 Air traffic in EU-27

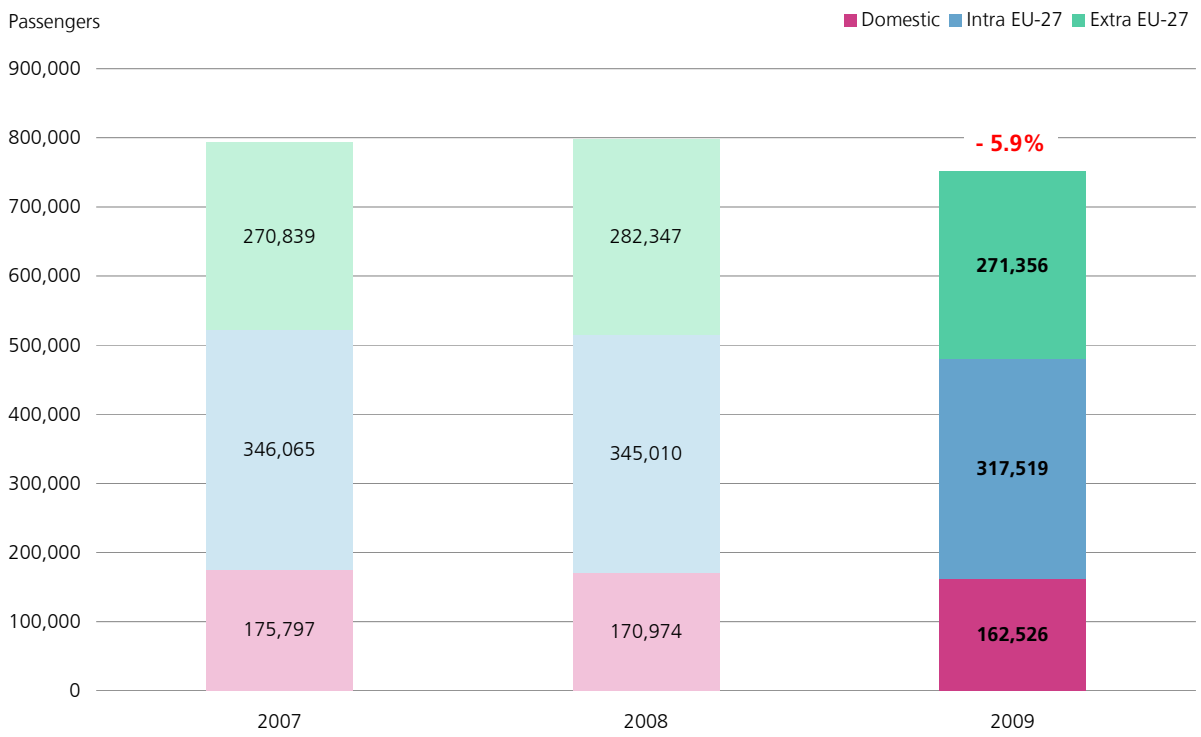
The numbers in this section are based on the official air transport statistics published by Eurostat.

1.2.1 European passenger traffic

Overall, the number of passengers in EU-27 declined in 2009 by 5.9% to 751 million. In this regard, there was an above-average decline in passengers flying between the individual EU member countries (cross-border traffic). This market lost 8% in comparison to 2008 while the extra-EU transport declined by 3.9%. 318 million passengers or 42% had another EU country as their destination while 22% were travelling domestically and approximately 36% to a non-EU country.

Figure 1-7: Development of passenger traffic in the EU-27

Source: EUROSTAT



1.2.2 Passenger traffic flows between EU Member States

In 2009, the demand for passenger traffic between two EU member countries declined for all of the 20 traffic flows with the largest volumes. In particular, the traffic between the UK and Spain – which has the highest volume with approximately 30.5 million passengers – showed a particularly large decline of approximately 12%. Also the traffic demand between Germany and Spain, approximately 20.3 million passengers, decreased by approximately 7% in comparison with the corresponding period from the previous year. The biggest decline was seen in the relation between the UK and Poland with -16.3%, while the smallest decline was seen between Spain and Belgium with -2.4%.

The differing decline figures are the result – as it is also the case with differing growth figures in "normal" times – of various influencing factors. The demand for air transport between Poland and the UK in 2009 thus suffered an above-average decline. This above-average decline is inversely proportional to the growth observed during the preceding years, when the growth between the UK and Poland, compared to other EU figures, was far in excess of the average growth. The dynamic in the sub-segment UK–Poland is also above-average. Primarily, this dynamic development can be explained with the struggle for market share between airline companies in this market, especially the so called Low-Cost Carriers. Until 2008 some low-cost airlines such as Ryanair, easyJet, Wizz Air and Centralwings increased their supply between the UK and Poland. From July 2007 to July 2008 there was an increase of nearly 33% from 323

weekly flights in 2007 to 429 flights in 2008 (source: OAG). One year later, in summer 2009, the supply was reduced to 292 flights per week. In this time the Polish airline Centralwings disappeared from the market accompanied by a reduction of flights by British Airways, easyJet and Wizz Air. Only Ryanair increased its supply slightly.

The passenger volume for the tourist route UK-Spain sank by some 12%. A comparison between the demand and supply on this route delivers no concrete hints for this development. From 2007 to 2008 the number of weekly available seats from the UK to Spain sank from 444,592 to 424,204. One year later – in summer 2009 – only 415,052 offered seats - a decrease of 2.2% - could be seen in the OAG data. At the same time however some low-cost airlines, such as easyJet and Ryanair, increased their supply.

Table 1-1: Main passenger traffic flows between EU Member States

Source: EUROSTAT

Passengers 2009 *in thousand*			
			change to 2008
UK	↔ Spain	30,511	-12.0%
Germany	↔ Spain	20,345	-7.0%
UK	↔ France	10,911	-8.2%
UK	↔ Ireland	10,825	-11.5%
UK	↔ Germany	10,643	-4.0%
Germany	↔ Italy	9,960	-4.5%
UK	↔ Italy	9,918	-7.4%
Spain	↔ Italy	9,492	-3.9%
France	↔ Italy	7,856	-3.5%
Spain	↔ France	7,575	-10.0%
The Netherlands	↔ UK	6,985	-8.9%
France	↔ Germany	6,468	-8.3%
Austria	↔ Germany	5,555	-4.6%
UK	↔ Portugal	4,954	-9.2%
UK	↔ Greece	4,869	-6.3%
Germany	↔ Greece	4,559	-4.9%
The Netherlands	↔ Spain	4,329	-11.5%
UK	↔ Poland	3,919	-16.3%
Spain	↔ Belgium	3,481	-2.4%
Spain	↔ Ireland	3,086	-12.6%

1.2.3 Passenger traffic flows between the EU-27 and other world regions

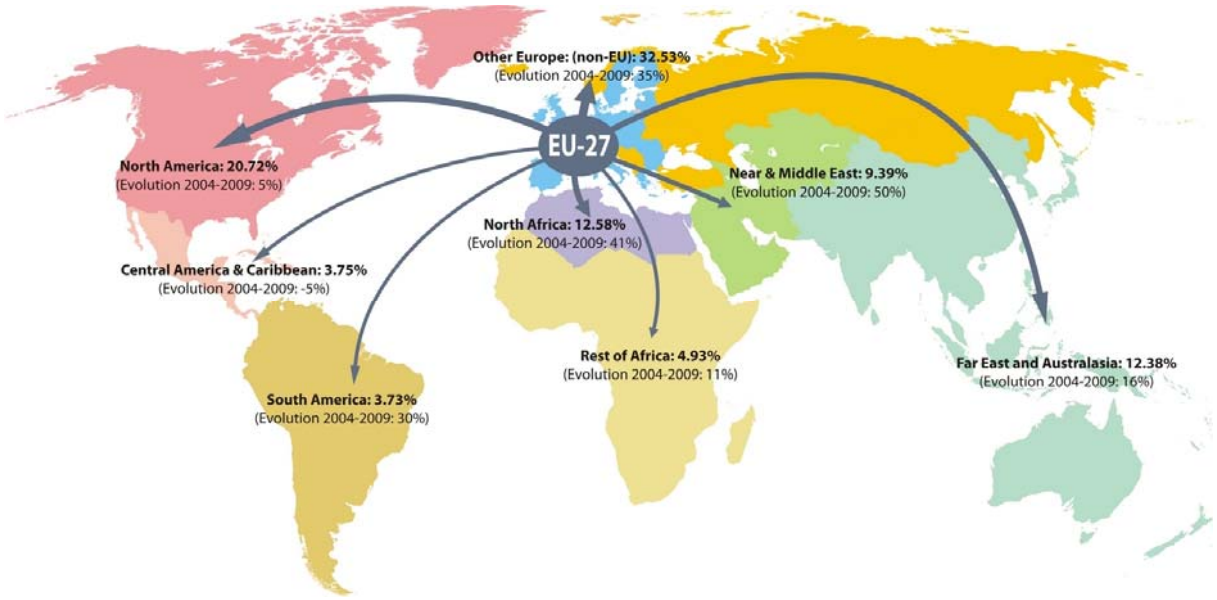
The development of passenger flows from EU-27 to other regions of the world, or to European countries which are not members of the EU, was quite differentiated in 2009. Stagnation could be observed in EU-27 – North Africa traffic demand, while most other markets showed more or less large declines. Thus, the passenger transport between EU-27 and North America declined by 8%. The largest decline was seen in traffic flow from and to the region Central America / Caribbean with 10.5%. With a -3.5% decrease to 88 million passengers, the decline for

passengers travelling between EU and to the other European countries was rather modest. Only the traffic flow from and to the Near and Middle East region shows a relative strong growth of 4.2%.

	million	change to 2008	share of total volume
Other European countries (non-EU)	88.0	-3.5%	32.5%
North America	56.1	-8.0%	20.7%
North Africa	34.0	-0.3%	12.6%
Far East and Australasia	33.5	-5.3%	12.4%
Near and Middle East	25.4	4.2%	9.4%
Rest of Africa	13.3	-2.0%	4.9%
Central America and Caribbean	10.1	-10.5%	3.7%
South America	10.1	-5.5%	3.7%

Figure 1-8: Passenger flows from EU-27 and selected regions in 2009

Source: EUROSTAT

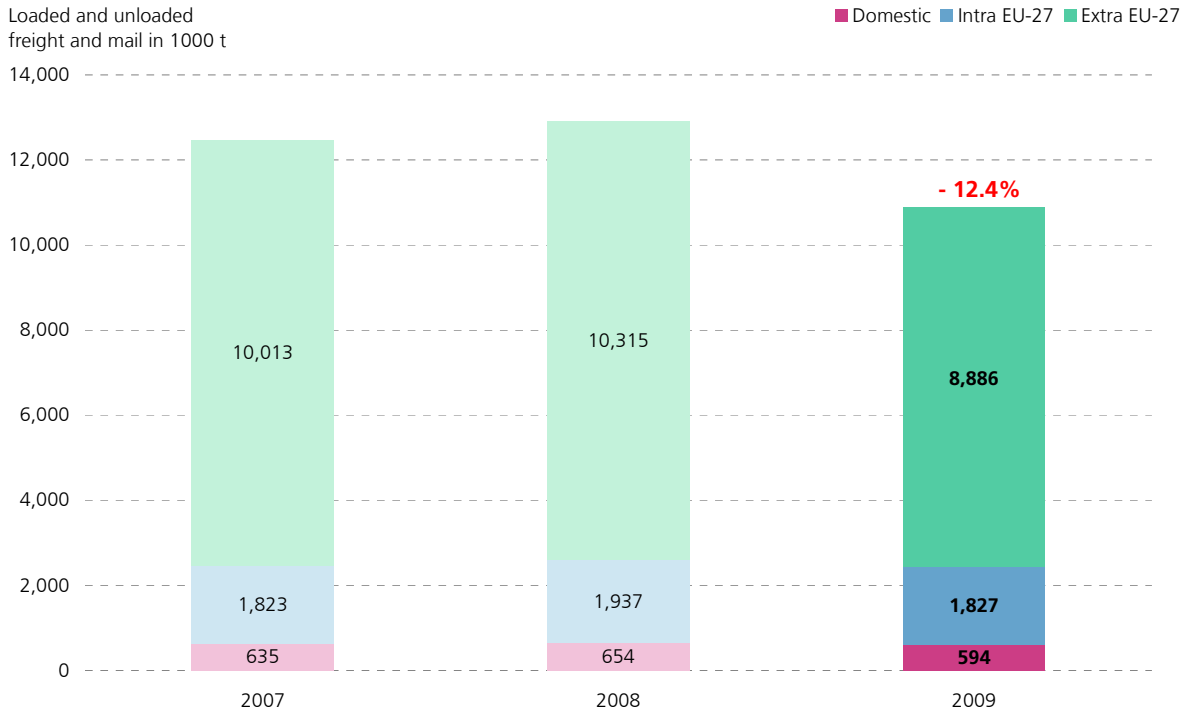


1.2.4 European air freight traffic volume

As was also the case globally, air freight transported in Europe declined in 2009 even more strongly than carried passengers. Thus, the overall volume of freight handled in 2009 declined by 12.4% from 12.9 million to 11.3 million tonnes in comparison to the previous year. There was a decline in the three markets "domestic", "intra-EU-27" and "extra-EU-27" that were analysed. Thus, as the smallest market by volume, the domestic volume fell by 9.1%, while the volume between the EU-27 countries declined by 5.7% and the most important market, the extra-EU transport, fell by a massive 13.9%.

Figure 1-9: Total freight and mail handled in the EU-27 (2007-2009)

Source: EUROSTAT



1.2.5 Freight traffic flows between EU-27 Member States

The freight volumes between the individual EU member countries shown in Table 1-2 often experience quite large fluctuations - even in "calmer" times. This is attributable above all to the fact that the individual freight flows depend upon individual airlines and their network dynamics. Thus, the volume of the loaded freight for the largest relations by volume between Germany and the UK as well as between Germany and France actually increased during 2009 while almost all – oftentimes very much smaller – flows declined slightly or even strongly. As was already shown in the last annual report, the freight transport from Belgium to the other EU countries also strongly declined during 2009. Besides the economic crisis, restructurings in the air freight companies' logistical processes may also still be playing a role in this regard.

Freight flows in 2009			1000 tonnes	change to 2008
Germany	→	UK	79.8	3.4%
Germany	→	France	79.2	6.4%
UK	→	Germany	69.4	4.4%
Germany	→	Spain	56.5	-2.9%
Germany	→	Italy	50.1	6.9%
Italy	→	Germany	48.1	3.1%
France	→	Germany	47.5	-11.5%
Germany	→	Sweden	31.5	-3.3%
UK	→	Belgium	29.2	-1.9%
Spain	→	Germany	28.2	0.9%
Belgium	→	UK	28.0	-17.5%
Belgium	→	Germany	27.0	-8.8%
Italy	→	Luxemburg	22.2	12.6%
Germany	→	Belgium	19.0	-24.7%
France	→	UK	18.2	-15.3%
UK	→	France	17.3	-4.4%
Sweden	→	Germany	16.9	0.1%
Germany	→	Poland	16.6	-9.2%
Italy	→	Belgium	15.8	-23.3%
Germany	→	Austria	15.7	1.2%
Belgium	→	Spain	15.5	-28.2%
Germany	→	Greece	14.7	1.7%
UK	→	Ireland	14.4	-20.3%
Belgium	→	Italy	14.2	-25.9%
France	→	Spain	13.5	-25.0%

Table 1-2: Important freight traffic flows between EU Member States

Source: EUROSTAT

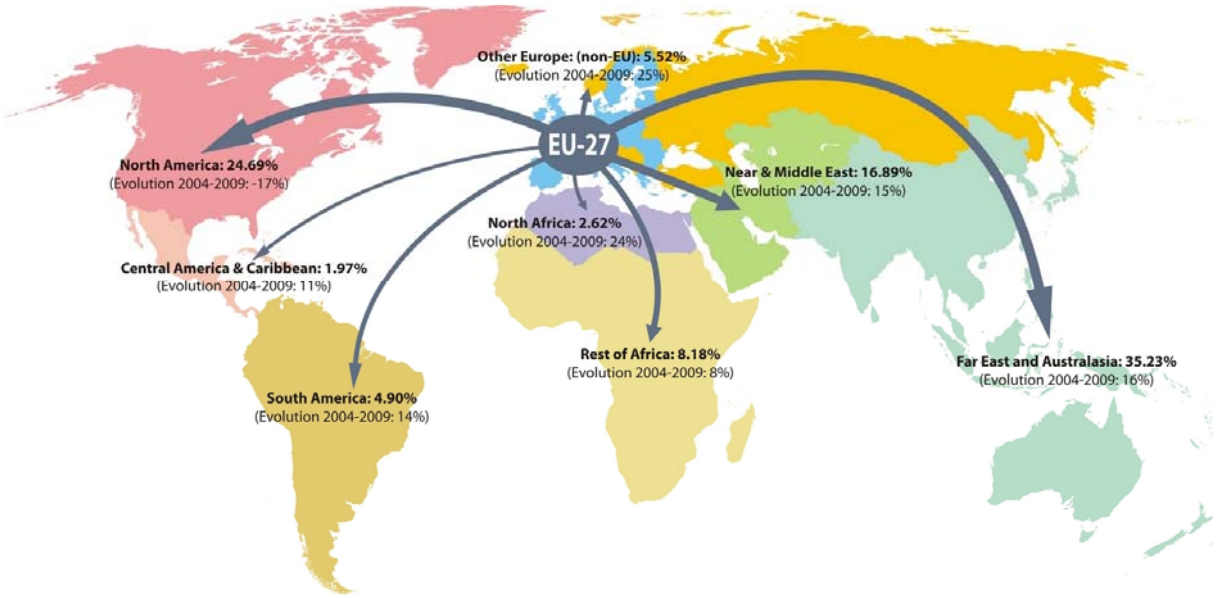
1.2.6 Freight traffic flows between the EU-27 and other world regions

The volume of air freight between EU-27 and other regions of the world also declined substantially in 2009. Thus, the volume for the most important relations between EU-27 and North America, as well as between EU-27 and the Far East and Australasia, declined more than 15% in comparison with the corresponding year 2008. Even the volume between EU-27 and the Near/Middle East, which had increased strongly during recent years, declined substantially (-6.5%). The global economic crisis is also reflected in the extra-EU freight transport across borders. Sometimes the declines in volume coincide with decreasing foreign trading activities, whereby a direct correlation between inter-continental volume flows and foreign trade is not necessarily present. For example, the Near and Middle East regions intend to have an important hub function in the global trading of goods. Thus, it is not necessarily the departure point and/or destination of the freight volume indicated in the transport flow.

Figure 1-10: Important air freight traffic flows between the EU-27 and other world regions

Source: EUROSTAT

EU-27: loaded and unloaded Freight in 2009 *in thousand tonnes*									
	unloaded from	+/- to 2008	share of total	**loaded to**	+/- to 2008	share of total	**total**	+/- to 2008	share of total
Far East and Australasia	1,769	-19.0%	38.4%	1,355	-12.0%	31.8%	3,124	-16.1%	35.2%
North America	1,096	-21.3%	23.8%	1,094	-16.0%	25.6%	2,189	-18.8%	24.7%
Near and Middle East	690	-7.6%	15.0%	808	-5.6%	18.9%	1,498	-6.5%	16.9%
South America	223	-5.8%	4.8%	212	-5.9%	5.0%	435	-5.9%	4.9%
Other European countries (non-EU)	260	11.6%	5.7%	229	-16.4%	5.4%	489	-3.5%	5.5%
North Africa	143	8.0%	3.1%	89	-14.3%	2.1%	232	-1.8%	2.6%
Rest of Africa	353	-11.4%	7.7%	372	-15.0%	8.7%	725	-13.3%	8.2%
Central America and Caribbean	68	-6.5%	1.5%	107	-14.5%	2.5%	175	-11.6%	2.0%

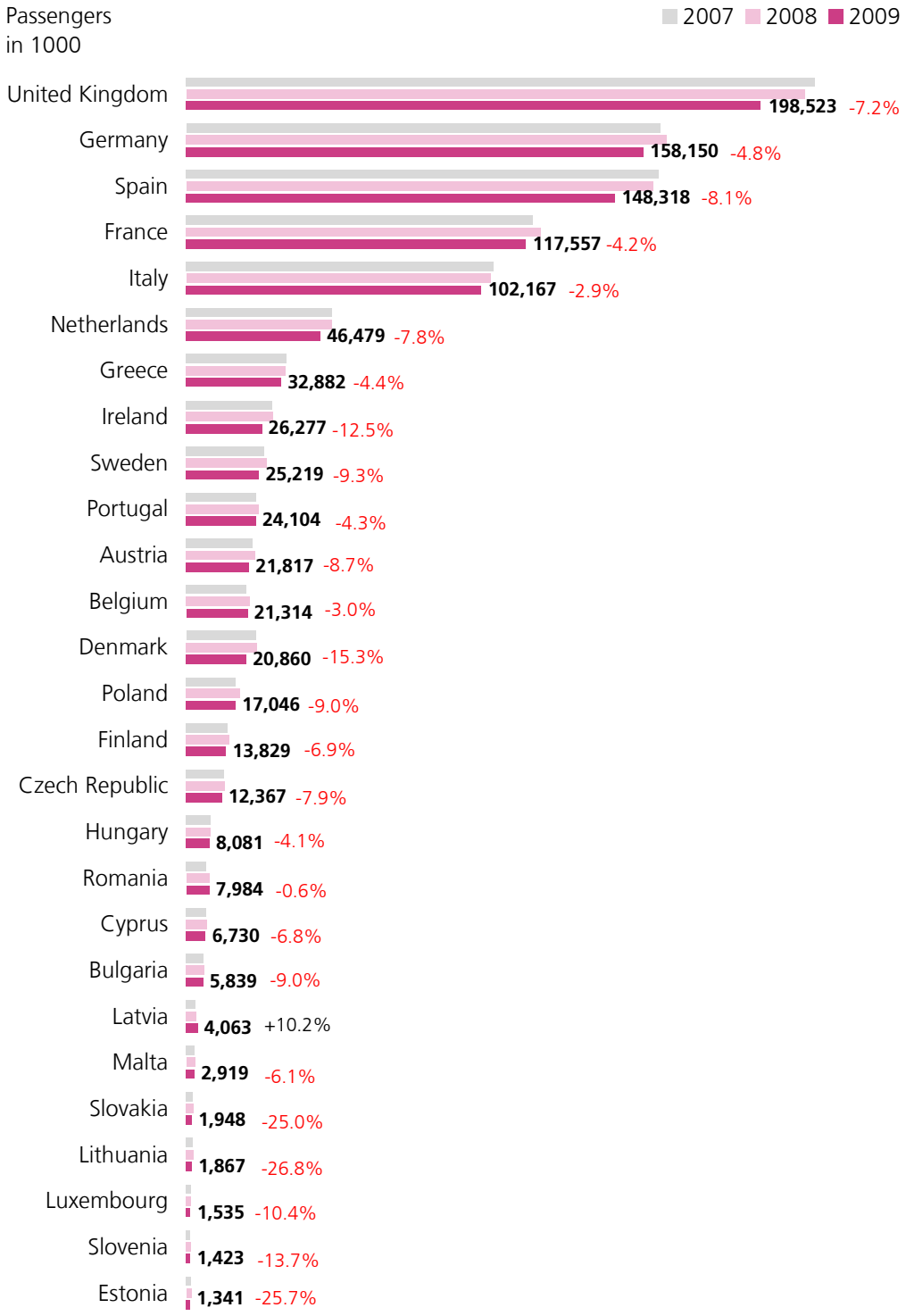


1.3 Air traffic in EU Member States

1.3.1 Passenger volume

Figure 1-11: Passenger traffic of the EU-27 Member States

Source: EUROSTAT



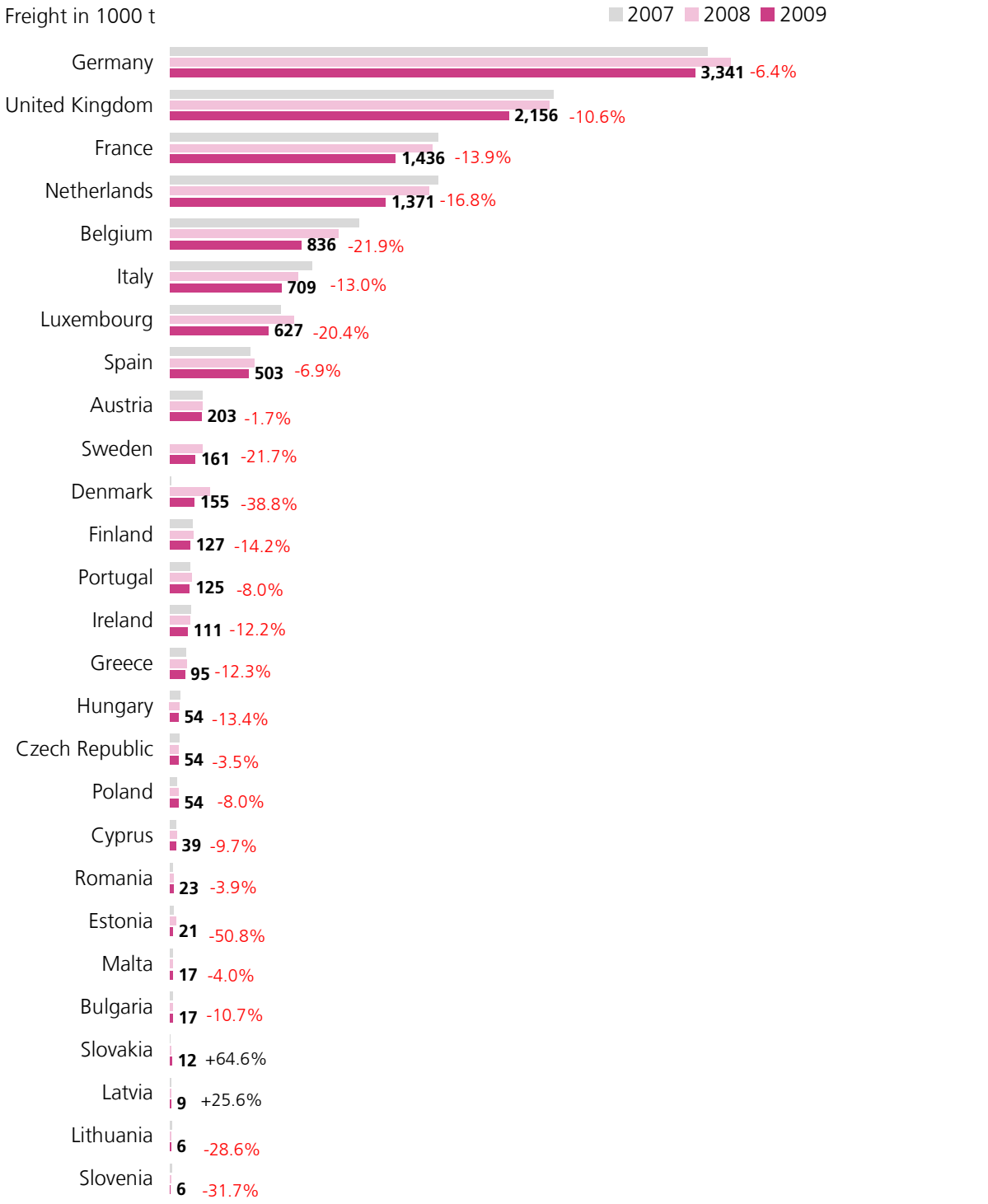
In 2009, the passenger volume declined in all EU member countries in the reported data, with one exception: in Latvia, the volume increased by almost 10% from 3.7 million passengers to 4.1 million passengers. In Estonia, also a country with a rather small passenger volume, the volume declined over the same period by more than 25% to 1.3 million passengers. For countries with relatively small overall volumes, changes in supply may have substantially larger fluctuations than in the countries with large volumes. This is attributable to the fact that the passenger volumes are dependent upon a smaller number of flights than in the countries with many (international) airports where a large number of flights are offered. If airlines reduce their supply in countries with large networks, there is still sufficient alternative supply for passengers. However, in countries with a thin network, a reduction in supply may result in passengers who wish to travel having to opt for services in other countries. Thus, in countries such as Slovenia, Slovakia and the Czech Republic, substantial declines are being seen after years of strong growth. But even the countries with large passenger volumes have suffered substantial reductions. Thus, the volume in Germany declined by 5%, in the UK by almost 7% and in France by 4%.

1.3.2 Freight volume

Even larger differences than in passenger transport exist when comparing the volumes of freight of the individual EU member countries. This is attributable to the varying logistical concepts for the transport of passengers and goods. In passenger transport, travel chains consisting of the preliminary leg of the trip (travel to the airport), main leg of the trip (flight) and final leg of the trip (travel to final destination) dominate, whereby the minimisation of travel time can be an important criterion. This can be primarily attained by reducing the preliminary leg and the final leg of the trip; that is, by using the airports which are as close as possible to the departure point and destination. In freight transport, however, cost minimisation strongly dominates the transport process and is attained through the bundling of freight for individual relations, while preliminary and final legs of travel may also be carried out through extensive overland routes. Thus, some countries have experienced large increases in freight handling while other countries have rather small air freight volumes. The countries with the largest volumes are Germany (3.3 million tonnes in 2009), the UK (2.2 million tonnes), France (1.4 million tonnes) and the Netherlands (1.3 million tonnes). In all these countries, the freight volumes strongly declined in 2009 (Germany: 6.4%, UK 10.6%, France: 13.9% and the Netherlands: 16.8%). In addition to these countries, Belgium (0.8 million tonnes in 2009 with a 22% decline), Italy (0.7 million tonnes, 13% decline), Luxembourg (0.6 million tonnes, 20% decline) and Spain (0.5 million tonnes, 7% decline) all have extensive freight volumes.

Figure 1-12: Freight traffic of the EU-27 Member States

Source: EUROSTAT



1.3.3 Flight volumes in the European countries

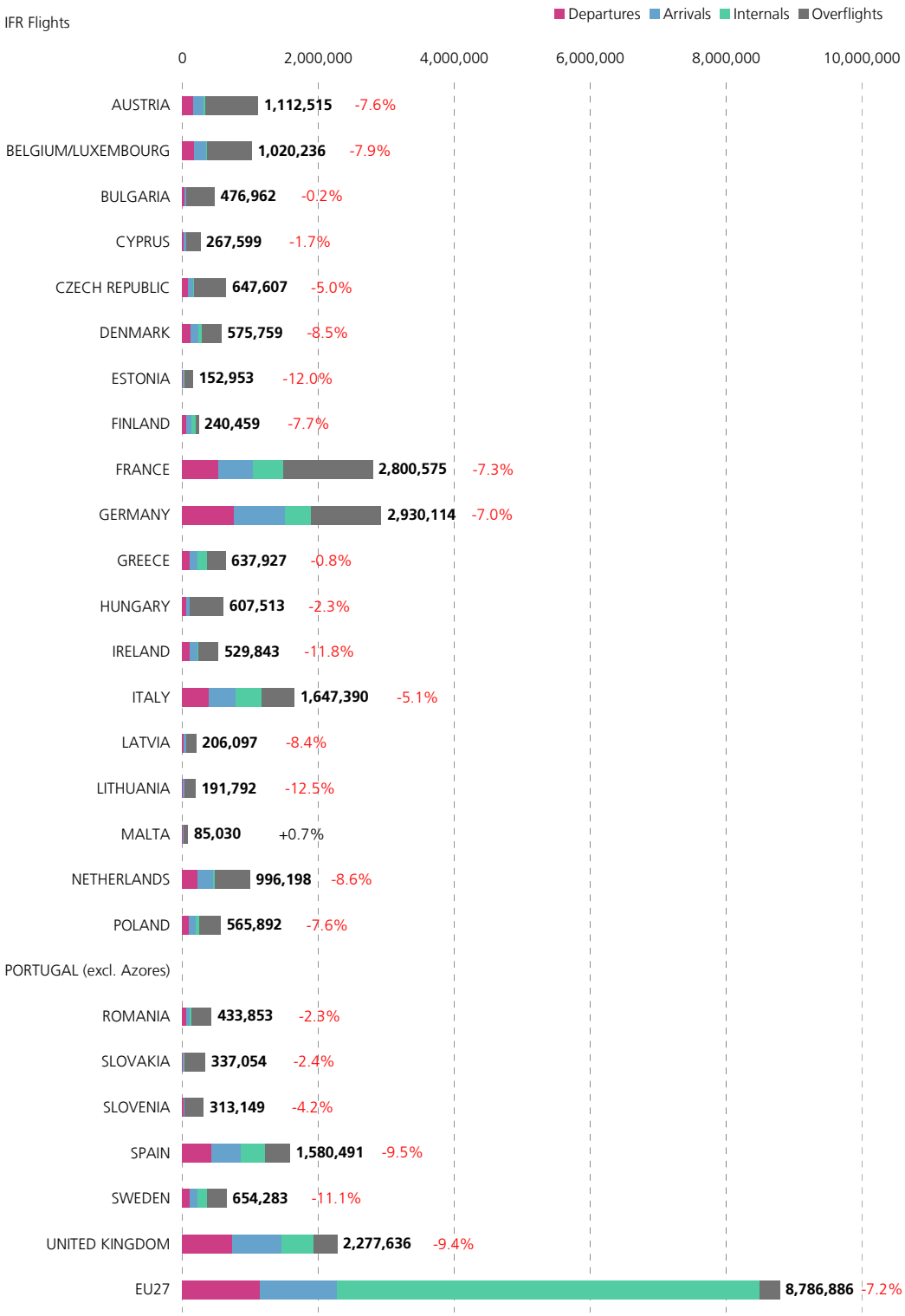
Besides the traffic (passengers and goods) handled in each country – the demand side of air transport – the number of flights performed constitutes an essential measurement for air traffic. Figure 1-9 shows flight movements performed in European countries in 2009. Whereas the

statements on European traffic development, as given in the preceding chapters, are based on data provided by EUROSTAT, data provided by the European Organisation for the Safety of Air Navigation, EUROCONTROL, is used here. This data is not directly comparable with that provided by EUROSTAT. While Eurocontrol includes only flights performed according to Instrument Flight Rules (IFR), Eurostat may also include some VFR-flights. However, the flights indicated in the EUROSTAT air transport statistics constitute the major part of IFR flights recorded by EUROCONTROL. Besides airplanes departing from or arriving in a country, "overflights" are also relevant for the evaluation and planning of flight control capacity. "Overflights" are performed by airplanes which only cross a country's territory in the air and therefore do not take off or land there.

The economic crisis impacted strongly upon the number of flights recorded in European airspace during 2009 (see Fig. 1-9). The volume of flight movements dropped, to a varying degree, in almost all countries. 8.8 million flight movements were registered in the EU-27 Member States – a 7.2% reduction compared to the previous year. In some countries with high numbers of movements, the drop was of comparable magnitude, for example in Germany (-7%), France (-7.3%), Belgium (-7.9%), and Austria (-7.6%). In the UK (-9.4%) and Spain (-9.5%), there was a slightly above-average decline. Ireland had to deal with a decline that was greatly above-average (almost 12%) to approximately 0.5 million flight movements. A similar decline in percentage terms, although on a much lower absolute level, was also seen in the Baltic States.

Figure 1-13: IFR flights in EU Member States in 2009

Source: Eurocontrol



1.4 General Aviation

General aviation in the EU is a diverse and dynamic sector undergoing rapid changes. It involves a wide spectrum of aircraft ranging from gliders to complex business jets and provision of high value services such as aerial works or emergency and business door-to-door transportation. It constitutes an important part of the EU aeronautical industry. Figure 1-14 gives a review of the different elements of general aviation with their relationship to each other and commercial scheduled flights.

Following the consultations on general aviation in 2007, the Commission published a communication concerning an agenda for a sustainable future in general and business aviation[1] in January 2008. It is the first time since creation of the EU internal aviation market that the Commission has studied this sector, quantified its value and identified the challenges that it is facing. The Commission proposes to integrate general and business aviation into the EU air transport policy.

The main elements of the abovementioned agenda are:

- Improving data gathering and building a basic set of data regarding European general and business aviation
- Screening legislation to ensure proportionality due to this field's limited ability to keep pace with changes in regulatory or technical requirements
- Integrating general and business aviation into the capacity optimisation initiatives as regards airports and airspace
- Facilitating access to world markets for the manufacturing industry and commercial business aviation within the EC external air transport policy
- Ensuring environmental sustainability in order to minimise the impact of general and business aviation on the environment
- Enhancing research and development in general and business aviation

In April 2008, the Council welcomed the Commission Communication providing a clear overview of the sector and presented a coherent position as regards its future development[2].

In September 2008, a hearing on general and business aviation took place on request of the Commission as the next important step in the EU-wide debate on the future of this field of aviation[3]. The Commission proposed to present a roadmap of concrete actions implementing its agenda. In the field of air safety and in line with the principle of proportionality, the Commission determined that the current provisions of Annex I (Part M) to Regulation (EC) No 2042/2003 are too stringent for aircraft not involved in commercial air transport. The Commission adopted two

[1] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0869:FIN:EN:PDF
[2] http://ec.europa.eu/transport/air/internal_market/doc/ga_council_conclusions.pdf
[3] http://ec.europa.eu/transport/air/internal_market/general_aviation_hearing_en.htm

regulations revising requirements for continuing airworthiness of aircraft not involved in commercial air transport, in order to adjust them to the complexity of different categories of aircraft and types of operations while ensuring a uniform and high level of safety across the EU[4].

In February 2009, the European Parliament[5] welcomed the Commission's Communication of 11th January 2007 on general and business aviation[6] and called for proportionate regulation, increased airport and airspace capacity, and measures to further environmental sustainability.

Air traffic is increasing in general and as the fastest growing sector in civil aviation in Europe, general and business aviation requires consideration within the European Union's transport initiatives. In the future, Commission, Council and Parliament will work together on this issue.

In the field of air safety, it has to be mentioned that several provisions of Regulation 1056/2008 related to licensing entered into force on 28th September 2009. For a smooth transition, Member States could elect to opt for these flexibility provisions.

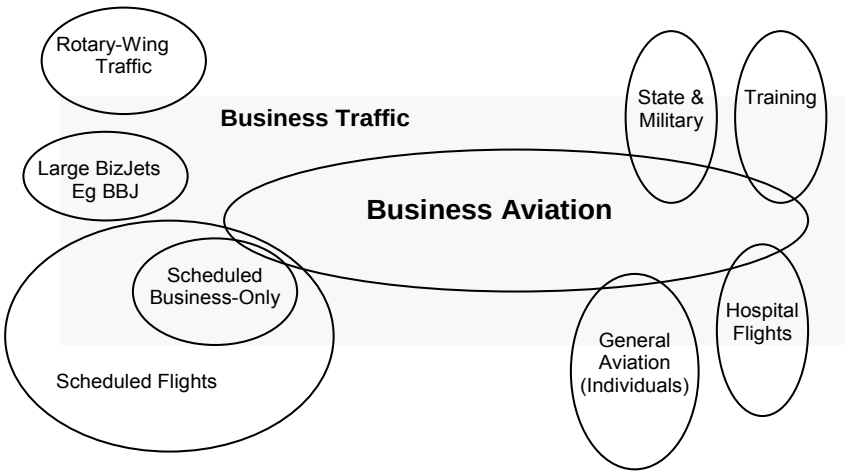
The focus in this chapter is on non-scheduled business aviation, as interest in business aviation has grown considerably in recent years. It is one of the largest and fastest-growing segments of general aviation and is still growing faster than the market for scheduled passenger flights. The number of operators in scheduled aviation in Europe is about 700. Although precise figures are difficult to obtain, the number of operators in business aviation is probably over 700. Given this and the fact that business aviation is around ten times smaller than scheduled aviation, most operators have only one or two aircraft. Only 10% of business flights are longer than 2,000 km and about half are less than 500 km, thus most business flights are shorter than the average scheduled flight. The European business fleet has grown by about 3,000 airframes in the last two years and is expected to reach about 4,600 by 2017. If taxi operations grow as strongly as expected in the future, business aviation could contribute 0.8 percentage points per year to total growth in traffic of about 3.7% to 4.7% per year (Eurocontrol 2008); however, this growth has now been affected by the economic downturn.

Annually updated data on business aviation is often still difficult to obtain, as a number of studies are conducted only on a one-off or irregular basis. Therefore, statistics from past years were included provided they possess sufficient significance for the year 2008.

[4] Commission Regulation (EC) No 1056/2008 of 27 October 2008 amending Regulation (EC) No 2042/2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks
Commission Regulation (EC) No 1057/2008 of 27 October 2008 amending Appendix II of Annex to Regulation (EC) No 1702/2003 concerning the Airworthiness Review Certificate (EASA Form 15a)
[5] http://www.europarl.europa.eu/news/expert/infopress_page/062-48074-033-02-06-910-20090202IPR48072-02-02-2009-false/default_en.htm
[6] http://eur-lex.europa.eu/LexUriServ.do?uri=COM:2007:0869:FIN:EN:PDF

Figure 1-14: General aviation and business aviation

Source: Eurocontrol 2008

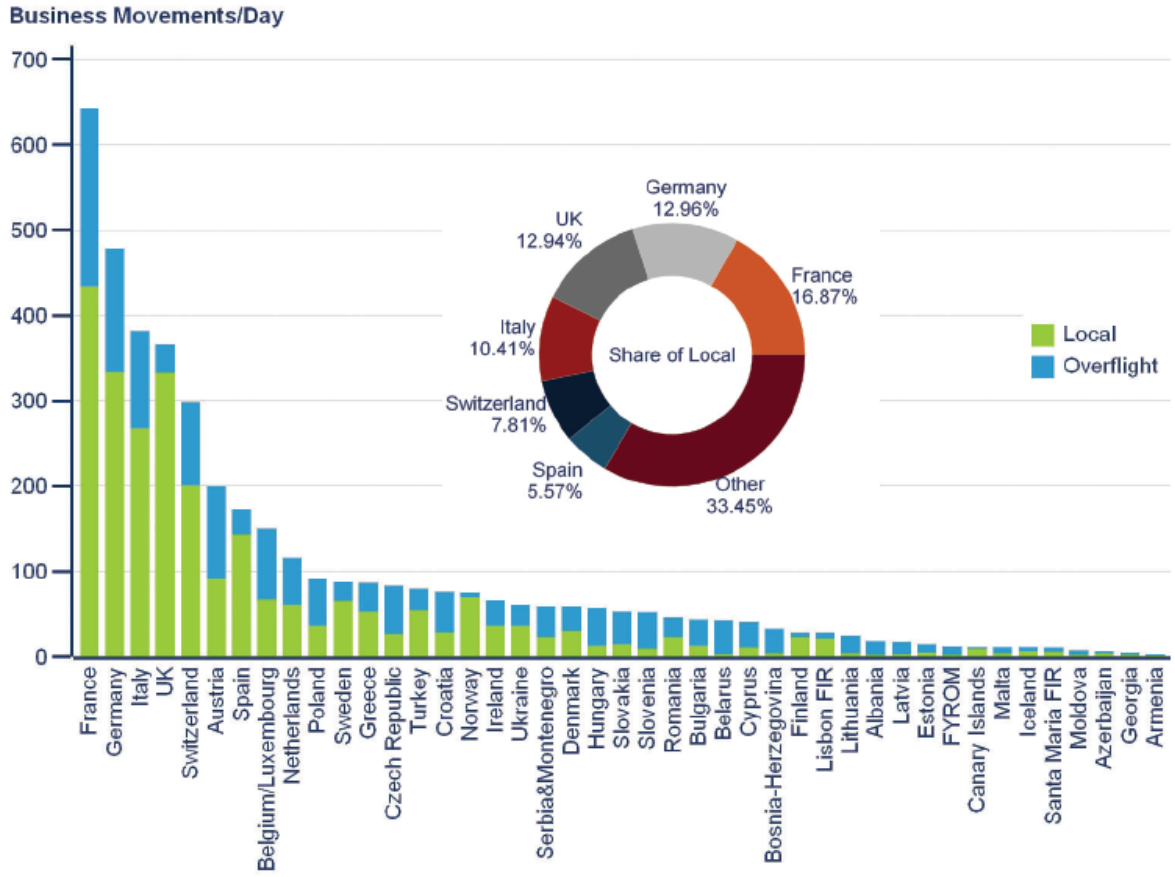


In this report, general aviation is defined similarly to the definition used by Eurocontrol (2008) for business aviation, i.e. by aircraft type, as this captures the essence of this market segment best. This means that all aircraft (piston, turboprop and jet) of a size below e.g. the Boeing Business Jet or B747 conversion are included in the definition; however, VFR flights are excluded, as data is difficult to obtain. In addition, Eurocontrol further excludes aircraft types from the definition of business aviation which are not employed mainly for business purposes. One case is the Piper 34, which is used more by training operators than in the business segment.

Business aviation is mainly concentrated in six European States, which account for two-thirds of business aviation movements at airports (called "local" in Figure 1-15, i.e. excluding overflights). Since 2007, the UK and Spain have lost a small amount of market share (0.6 to 0.8 percentage points). In the UK's case, this was enough to move it into third place behind Germany as a source of business flights, with France remaining clearly in first place with 16.9% of traffic at airports (Eurocontrol 2010).

Figure 1-15: Forecasted growth of business aviation from European airports

Source: Eurocontrol 2010



The latest Eurocontrol Medium-Term Forecast includes business aviation including past trends and the relationship with economic growth. Here, "business aviation" includes jet and non-jet traffic, and VLJs. The result was a baseline forecast of return to growth in 2010, stronger growth in 2011, and around 5% growth per year thereafter (Figure 1-16). This is weaker growth than in the period 2004-2007, but still stronger than that forecast for the main scheduled and charter passenger flows. The result of this above-average growth is that business aviation's share of all flights will gradually recover and should pass 8% by around 2015, from 6.9% in 2009 (Eurocontrol 2010).

Figure 1-16: Forecasted growth of business aviation from European airports

Source: Eurocontrol 2010

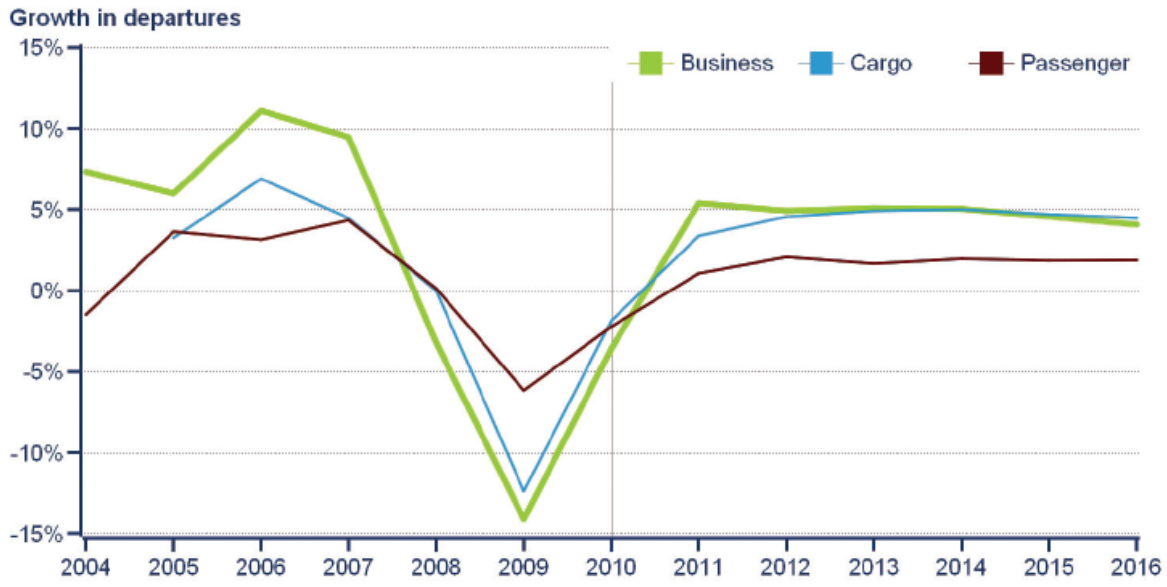


Figure 1-17 shows the historical order volumes of business jets from 1999 until 2009 and yearly order volumes forecast until 2018 (Bombardier 2009). As the worldwide economy recovers from the financial crisis and the resulting economic downturn, orders for business aircraft are expected to increase, so that deliveries of new business jets over the next 10 years will be sustained. The sharp contraction of the worldwide economy and ensuing recession during 2008-2009 is expected to be a significant factor in the reduction of near-term demand for business jets. A number of OEMs have and are likely to continue to record negative net orders in early 2009, due to a significant number of cancellations. New orders are forecast to reach a low of 375 units in 2009 and are expected to improve by the end of the year, reaching 2008 levels of approximately 1,400 units per year by 2013.

Figure 1-17: Business jet 10-year orders outlook

Source: Bombardier Business Aircraft Market Forecast 2009 - 2018

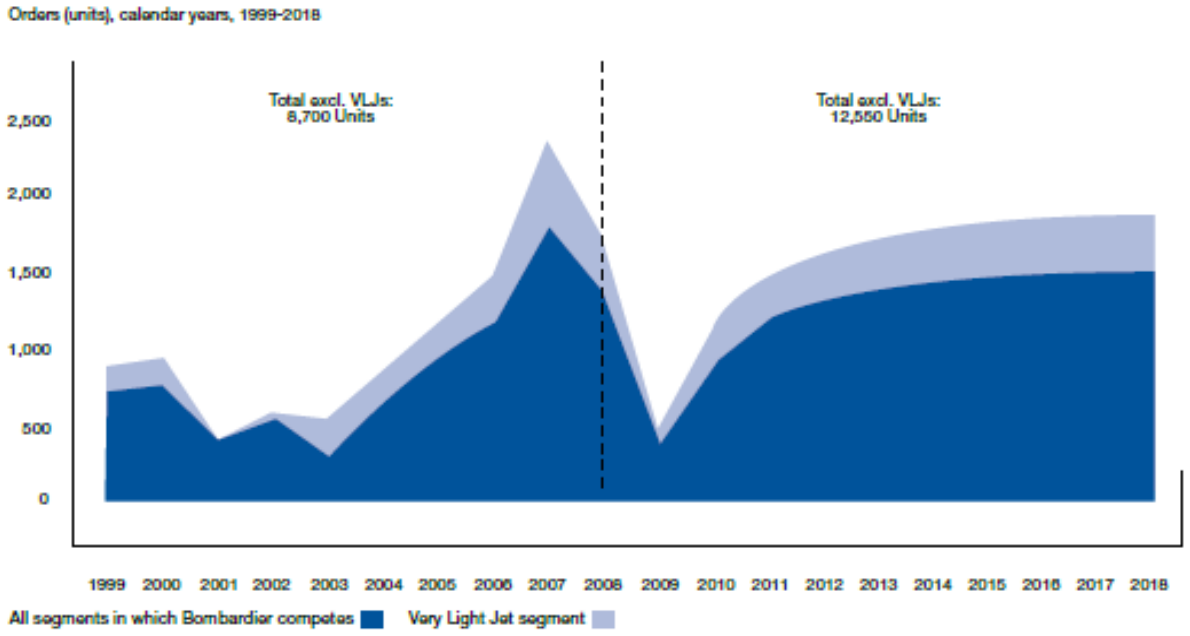
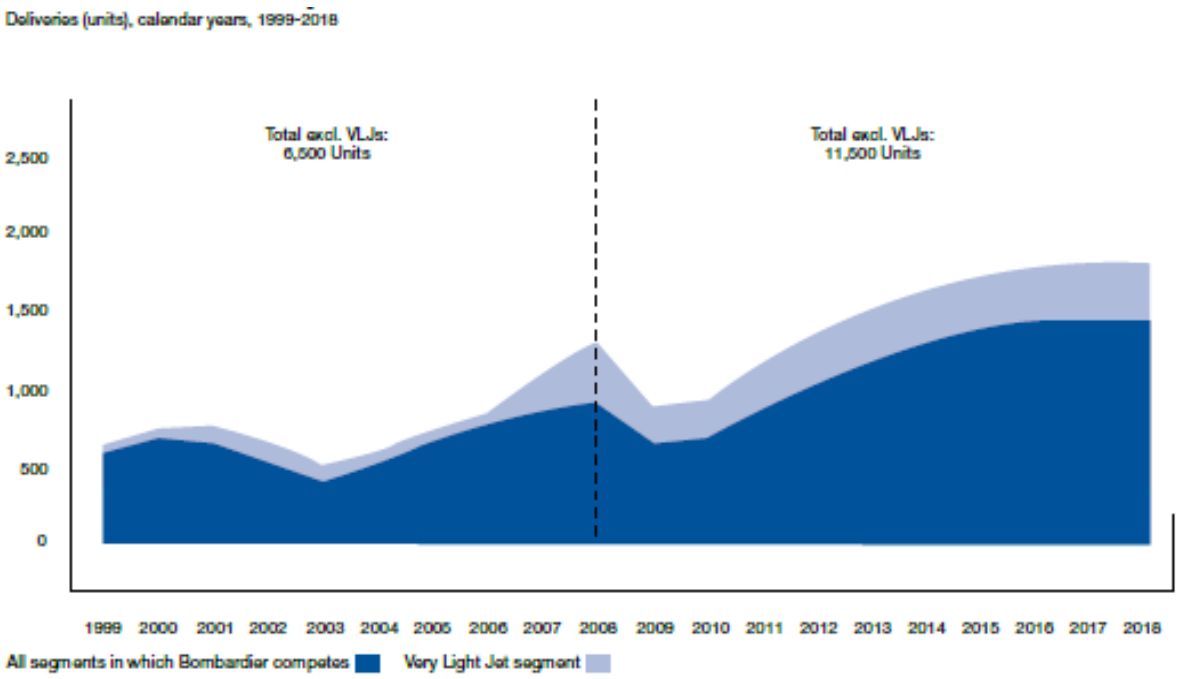


Figure 1-18: Business jet 10-year deliveries outlook

Source: Bombardier Business Aircraft Market Forecast 2009 - 2018



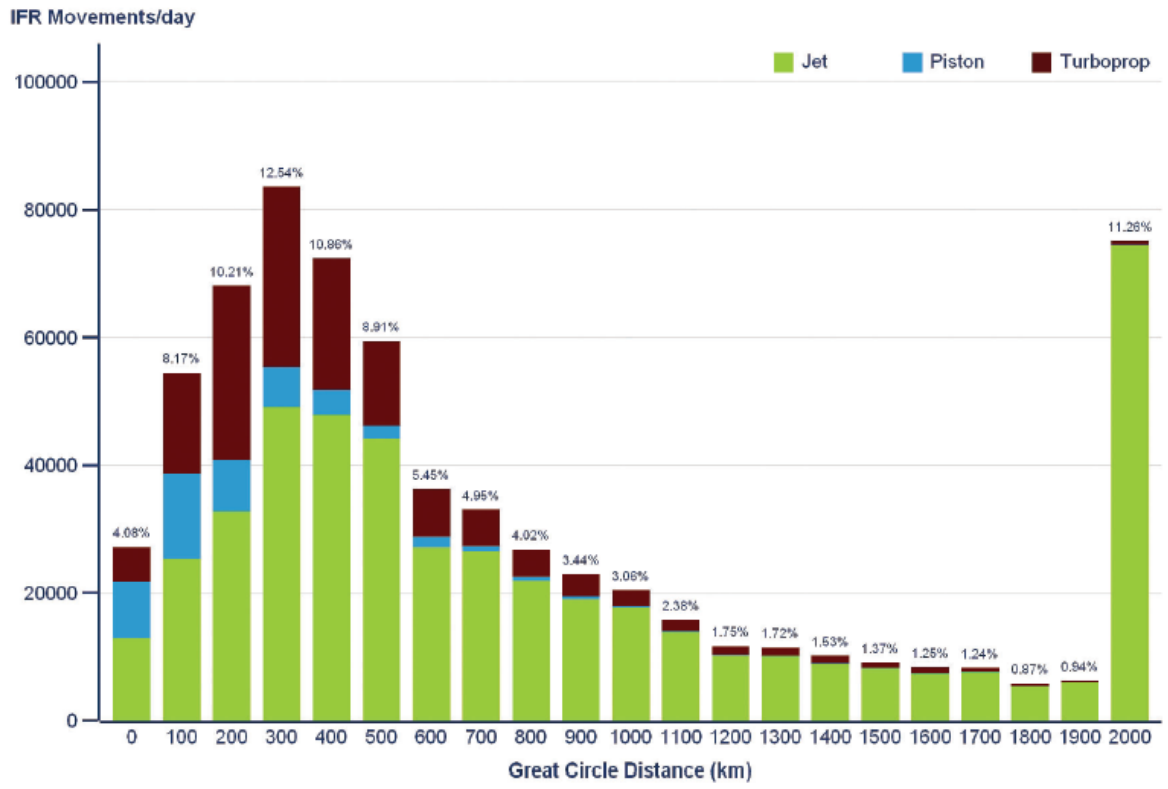
The delivery forecast of Bombardier (2009) shows demand for 11,500 aircraft that will generate $256 billion in total revenue in the light to large aircraft categories between 2009 and 2018,

compared to 6,500 aircraft and $122 billion in total revenue in the period 1999 to 2008. Industry deliveries are expected to recover from a low of 650 deliveries per year in 2009 and 2010, gradually increasing to approximately 1,400 industry deliveries per year by the end of 2018. Existing backlogs compensate lower order volumes in 2008-2009, thus dampening the negative effects of the financial crisis for business aircraft manufacturers.

Figure 1-19 shows the distances flown by business jet type. It can be seen that business aviation is mainly a short-range activity: more than 50% of flights cover a distance of less than 500km. There has been little change in the pattern compared to 2007; the number of medium and long-haul flights has not declined quite so quickly, with the share of flights of 2,000 km and more increasing to 11.3% from 10.5%. Piston-engined flights have become even more short-range, with mean great -circle distances falling by 14% to 237km. Over this period, there have been a number of measures to make the route network more efficient and thus bring the actual flown distance closer to the great circle, but this will not affect the statistics shown here (Eurocontrol 2010).

Figure 1-19: Distances flown by business aviation

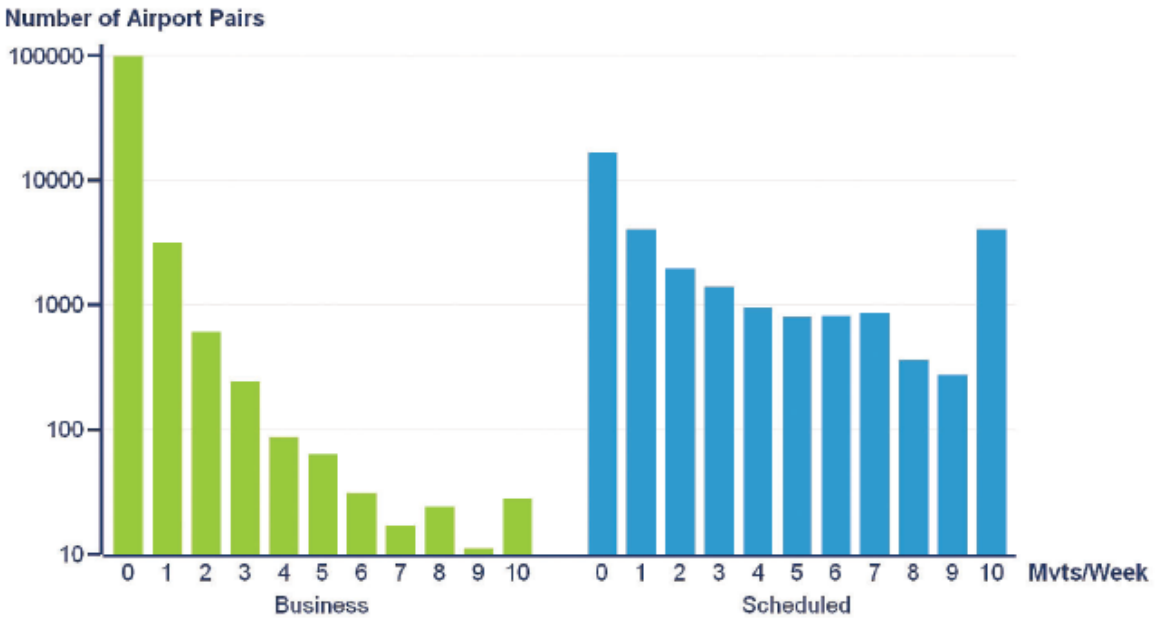
Source: Eurocontrol 2010



Figures 1-20 and 1-21 show that business aviation typically covers airport pairs not covered by scheduled aviation.

Figure 1-20: Business and scheduled flights, by frequency of service on an airport pair

Source: Eurocontrol 2010



European business aviation flew 103,000 airport pairs in 2009, compared to 32,000 for scheduled traffic. Most of those business airport pairs are flown very rarely, less than once per week. The 500 main routes for business aviation carried only 27% of all flights; scheduled traffic is more concentrated, with 38% of the flights operating on the top 500 routes. The recent reductions in business flights have hit the high-frequency airport pairs quite strongly. This is shown in Figure 1-17, where the numbers of airport pairs served 6 or more times per week have declined since 2007. It can also be seen in Figure 1-18, which looks at city pairs. In 2006 and 2007, 62% of business aviation flights were on city pairs that had no daily, scheduled connection. This number had fallen slightly from 63% in 2005 as business aviation expanded. However, with the downturn in business traffic, the trend reversed, climbing rapidly to 64% in 2008, and then 66% as shown here in 2009. The recession is clearly showing an increasing focus on city pairs that are not served by scheduled flights (Eurocontrol 2010).

Figure 1-21: Business aviation is concentrated on city pairs not served by scheduled operators

Source: Eurocontrol 2010

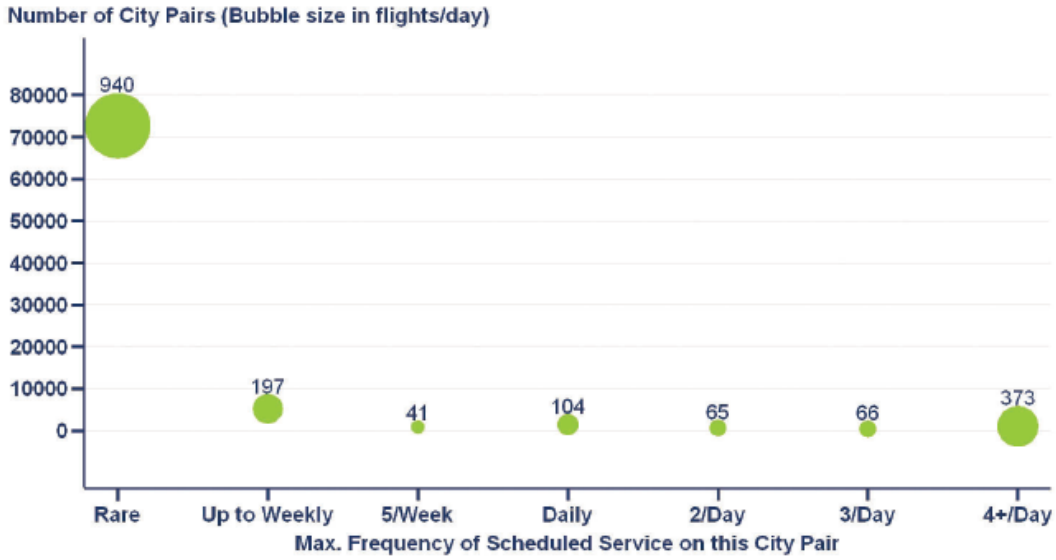


Table 1-3 shows the top 25 airports in Europe in terms of the number of business aviation departures per day. They range from 64.3 for Paris Le Bourget to 10.4 for Hamburg. Furthermore, the share of business aviation departures at these airports ranges from 86% for Paris Le Bourget and Farnborough to 3.1% for Munich 2. Business departures per day lie within a range from 10.4 to 64.3. As displayed in Table 1-6, there has been a considerable decline in the number of average departures per day at most business airports from 2008 to 2009, the reason being the financial crisis in that period. This is also backed up by Figure 1-16: in 2009, business traffic declined by almost 15%, but increased sharply thereafter.

Table 1-3: Airports with the most business aviation departures

Source: Eurocontrol 2010

2009 Rank	2008 Rank	ICAO Code	Airport	2009 Business Deps / Day	2008 Business Deps / Day	Business Growth	% Business	Busiest Business Day
1	1	LFPB	PARIS LE BOURGET	64.3	73.4	-12.3%	86%	123
2	2	LSGG	GENEVE COINTRIN	45.7	52.4	-12.7%	21%	111
3	6	LIRA	ROMA CIAMPINO	33.3	35.0	-4.9%	39%	128
4	3	LIML	MILANO LINATE	33.2	39.7	-16.4%	20%	67
5	4	LFMN	NICE	31.3	38.7	-19.1%	17%	105
6	5	EGGW	LONDON/LUTON	28.9	38.1	-24.2%	21%	57
7	7	LSZH	ZURICH	27.3	33.1	-17.4%	8.0%	70
8	8	EGLF	FARNBOROUGH CIV	25.7	29.5	-12.9%	86%	60
9	9	LOWW	WIEN SCHWECHAT	20.3	27.5	-26.1%	5.7%	44
10	10	LETO	MADRID TORREJON	17.6	22.8	-22.6%	69%	36
11	11	EDDM	MUENCHEN 2	16.9	21.3	-20.7%	3.1%	35
12	12	LFMD	CANNES MANDELIEU	16.0	18.6	-14.0%	83%	51
13	13	LGAV	ATHINAI E. VENIZELOS	14.8	18.5	-19.9%	5.3%	35
14	14	EDDS	STUTTGART	13.6	17.4	-21.8%	7.7%	31
15	30	EHGG	GRONINGEN-EELDE	12.8	10.7	19.5%	49%	30
16	15	EGKB	BIGGIN HILL	12.6	17.2	-26.6%	84%	30
17	16	LEBL	BARCELONA	12.0	14.9	-19.7%	3.1%	62
18	19	LIEO	OLBIA COSTA SMERALDA	11.8	13.7	-13.3%	32%	74
19	18	EBBR	BRUSSELS NATIONAL	11.2	14.2	-21.1%	3.6%	28
20	73	EDDB	SCHOENEFELD-BERLIN	11.1	5.8	89.6%	12%	31
21	24	LTBA	ISTANBUL-ATATURK	11.1	12.5	-11.5%	3.0%	25
22	17	LEPA	PALMA DE MALLORCA	10.8	14.6	-25.8%	4.5%	38
23	20	EHAM	SCHIPHOL AMSTERDAM	10.6	13.4	-20.6%	1.9%	30
24	23	EDDK	KOELN-BONN	10.5	12.9	-18.3%	5.9%	23
25	28	EDDH	HAMBURG	10.4	11.6	-10.3%	5.1%	28

Table 1-4 shows the 25 airports in Europe with the highest proportion of business aviation departures. The share of business aviation departures ranges from 100% for Barrow/Walney Island to 48% for Braunschweig. The average number of business departures per day ranges from 2.1 for Buochs to 64.3 for Paris Le Bourget. Here it can also be seen that most airports experienced a decline in the number of business departures from 2008 to 2009. Paris Le Bourget is a striking example of a business aviation airport: it has by far the most business departures per day (64.3) and business aviation is also the main segment at this airport (86% business).

Table 1-4: Airport with the highest proportion of business aviation departures

Source: Eurocontrol 2010

2009 Rank	2008 Rank	ICAO Code	Airport	Business Deps / Day	Other Deps / Day	Proportion Business	Business Growth	Busiest Day
1	1	EGNL	BARROW/WALNEY ISLAND	3.4	0.0	100%	-0.6%	8
2	2	EGWU	NORTHOLT	8.4	1.0	89%	-12%	24
3	3	LSGS	SION	5.7	0.8	88%	-11%	34
4	9	LSZC	BUOCHS	2.1	0.3	87%	-8.4%	10
5	4	EGLF	FARNBOROUGH CIV	25.7	4.1	86%	-13%	60
6	5	LFPB	PARIS LE BOURGET	64.3	10.8	86%	-12%	123
7	8	EGKB	BIGGIN HILL	12.6	2.4	84%	-27%	30
8	6	LSZS	SAMEDAN	3.8	0.8	83%	-21%	40
9	10	LFTZ	LA MOLE	3.6	0.8	83%	1.7%	24
10	7	LFMD	CANNES MANDELIEU	16.0	3.3	83%	-14%	51
11	11	EDMO	OBERPFAFFENHOFEN	3.2	0.8	80%	-8.5%	12
12	12	EDTY	SCHWAEB.HALL-HESSENT	5.5	2.1	72%	-3.5%	16
13	15	LFPV	VILLACOUBLAY	6.5	2.8	70%	-1.3%	22
14	13	LFPM	MELUN	2.5	1.1	69%	4.2%	9
15	16	LETO	MADRID TORREJON	17.6	7.8	69%	-23%	36
16	14	LFLY	LYON BRON	7.7	3.5	69%	-6.0%	27
17	17	EGSC	CAMBRIDGE	3.0	1.7	64%	-6.4%	10
18	19	LIRE	PRATICA DI MARE	4.3	2.7	62%	-2.2%	12
19	18	EBKT	WEVELGEM/KORTRIJK	2.8	2.2	56%	-34%	9
20	22	LSZR	ALTENRHEIN	7.1	5.9	55%	1.2%	26
21	27	EDLN	MOENCHENGLADBACH	4.0	3.5	53%	1.5%	13
22	24	EDVK	KASSEL-CALDEN	2.0	1.8	53%	-19%	9
23	20	EGNR	HAWARDEN	3.3	3.4	50%	-14%	15
24	30	EHGG	GRONINGEN-EELDE	12.8	13.4	49%	19%	30
25	25	EDVE	BRAUNSCHWEIG	6.2	6.8	48%	-5.9%	17

Table 1-5 depicts the busiest European airports in terms of the number of departures and their business traffic. These airports have only a very low share of business traffic (all below 10%) and thus only a small number of business movements in most cases. The main reason for this is the high degree of capacity utilisation at these airports, which reduces flexibility when scheduling a business flight at short notice. The share of business traffic is particularly low at the major European hubs such as, for example, Paris Charles De Gaulle, London Heathrow and Frankfurt, which face serious capacity constraints, limiting the flexibility of business aviation even further.

Table 1-5: Business aviation at the busiest European airports (in terms of the number of departures)

Source: Eurocontrol 2010

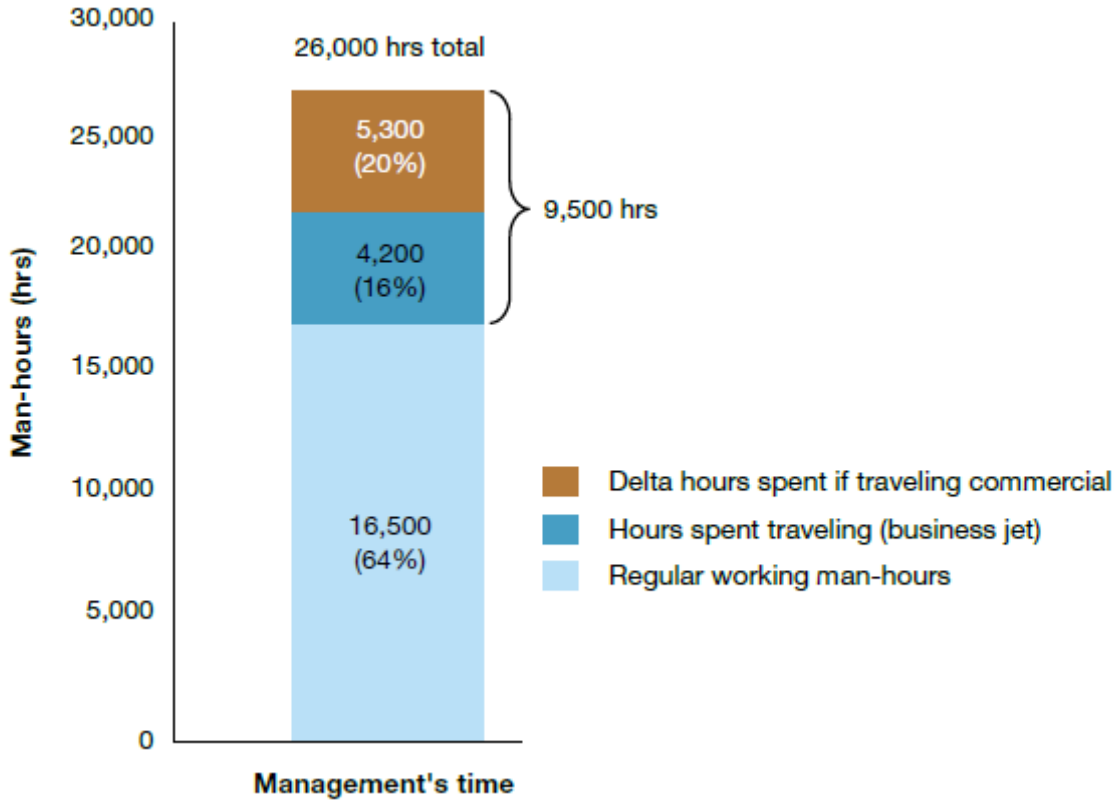
Rank	ICAO Code	Airport	Total Deps / Day	Business Deps / Day	Proportion Business	Business Growth	Busiest Business Day
1	LFPG	PARIS CH DE GAULLE	720	0.7	0.1%	-8.4%	6
2	EGLL	LONDON/HEATHROW	639	4.5	0.7%	30.3%	12
3	EDDF	FRANKFURT MAIN	634	9.1	1.4%	-6.3%	33
4	LEMD	MADRID BARAJAS	596	1.6	0.3%	-15.6%	9
5	EHAM	SCHIPHOL AMSTERDAM	550	10.7	1.9%	-20.5%	30
6	EDDM	MUENCHEN 2	539	17.0	3.1%	-20.6%	35
7	LIRF	ROME FIUMICINO	444	0.3	0.1%	-25.3%	5
8	LEBL	BARCELONA	382	12.0	3.1%	-19.6%	62
9	LTBA	ISTANBUL-ATATURK	371	11.1	3.0%	-11.2%	28
10	LOWW	WIEN SCHWECHAT	357	20.4	5.7%	-25.7%	44
11	EGKK	LONDON/GATWICK	345	2.4	0.7%	-11.1%	12
12	LSZH	ZURICH	343	27.8	8.1%	-16.3%	71
13	EKCH	COPENHAGEN KASTRUP	323	2.9	0.9%	-12.3%	19
14	EBBR	BRUSSELS NATIONAL	308	11.3	3.7%	-20.6%	29
15	LFPO	PARIS ORLY	307	0.5	0.2%	-26.4%	4
16	ENGM	OSLO/GARDERMOEN	296	9.9	3.3%	-12.3%	21
17	EDDL	DUESSELDORF	292	10.0	3.4%	-22.6%	31
18	LGAV	ATHINAI E. VENIZELOS	282	14.9	5.3%	-19.8%	35
19	ESSA	STOCKHOLM-ARLANDA	264	2.5	0.9%	-16.7%	9
20	LIMC	MILANO MALPENSA	257	5.1	2.0%	-9.7%	14
21	LEPA	PALMA DE MALLORCA	243	10.9	4.5%	-25.5%	38
22	EIDW	DUBLIN	240	7.4	3.1%	-30.0%	17
23	EFHK	HELSINKI-VANTAA	236	6.1	2.6%	-28.5%	23
24	EGCC	MANCHESTER	235	4.9	2.1%	-22.3%	17
25	EGSS	LONDON/STANSTED	228	5.5	2.4%	-30.7%	14

Figure 1-22 shows the individual time benefits of business aviation for management (Bombardier 2009). A business case created by Bombardier for a Midwestern U.S. firm showed that use of a super midsize business jet saves about 20% of management's total time, when compared with the scheduled airline alternative. In addition to the time savings and productivity benefits of

using a business jet, there are other less quantifiable but equally important benefits. These include e.g. on-demand flight schedules, the ability to conduct business conversations in private during flights, access to more airports located closer to the final destination (which may not be served by a scheduled airline), and reduced stress on the company's travellers.

Figure 1-22: Total economic impact of business aviation by value chain segment

Source: Bombardier Business Aircraft Market Forecast 2009 - 2018



2 Airlines

2.1 Passenger airlines

2.1.1 Worldwide scheduled departures

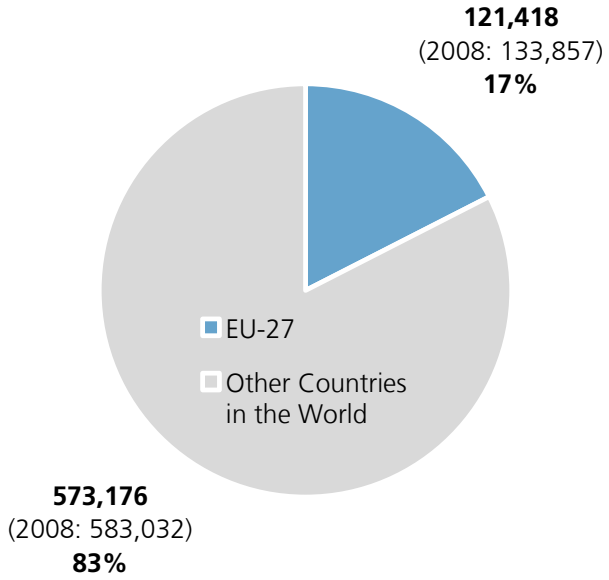


Figure 2-1: Global scheduled departures of commercial aircraft in the world in the third week of July 2009

Source: OAG 2009

Figure 2-1 shows the total number of scheduled aircraft departures worldwide in the third week of July 2009, of which 17% originate in the Member States of the EU-27. 83% of the worldwide departures originate in the rest of the world. The values in brackets correspond to the values for 2008. The overall number of departures worldwide has significantly decreased since 2008, which is mainly a result of the worldwide financial crisis since the second half of 2008. Traffic in the Member States of the EU-27 has decreased by about 9% and worldwide by around 2% since 2008.

Figure 2-2 illustrates the distribution of the worldwide departures in the third week of July 2009. A circled number displays the number of take-offs in thousands within a region, e.g. North America or Europe, and a boxed number denotes the number of flights in thousands between two regions, e.g. North America and Europe. Additionally, important airports are marked in terms of the main airline alliance operating there.

North America is the region with the highest number of intraregional flight movements, totalling 270,000, while the route between North and South America has the highest number of interregional flights, amounting to 15,000 in the third week of July 2009. The route between North America and Europe has the highest number of intercontinental flights, with a total of 9,000. The number of intraregional flights clearly exceeds the number of interregional flights in most cases, as illustrated by Figure 2-2.

Figure 2-2: Worldwide scheduled departures in the third week of July 2009

Source: OAG 2009

2.1.2 European departures and routes

In Figures 2-3 and 2-4, which are extracts from Figure 2-2, air routes in Europe with a high traffic volume regarding frequencies and seats offered, both on a weekly basis, are depicted (numbers in brackets).

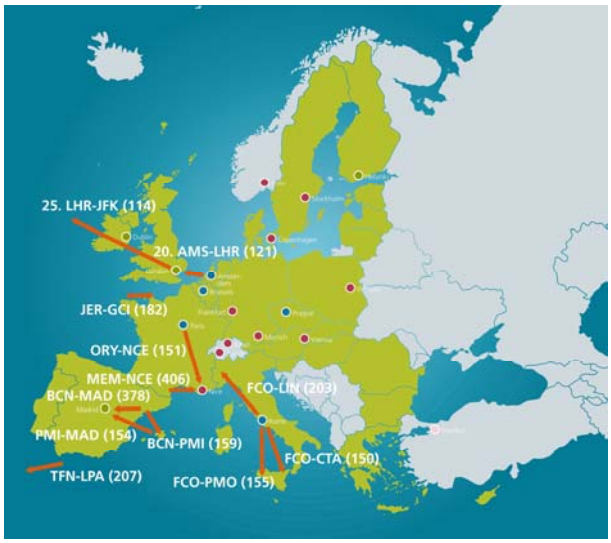


Figure 2-3: Main air routes in Europe in terms of flight frequency

Source: OAG 2009

Figure 2-3 illustrates the air routes with the highest flight frequencies per week. The top three air routes are Monaco – Nice, Barcelona – Madrid and Tenerife Norte – Gran Canaria with 406, 378 and 207 weekly take-offs in one direction respectively. Interestingly, air traffic on the route Monaco – Nice is solely a helicopter service with a very limited number of seats. Top routes in northern Europe are Jersey – Guernsey (both in the UK), Munich – Düsseldorf and Amsterdam – London Heathrow with 182, 143 and 121 weekly take-offs in one direction respectively. London Heathrow – Amsterdam is the top international air route within Europe. However, most air routes serve domestic markets or travel to and from islands. The busiest intercontinental air route departing from a European airport is London Heathrow – New York JFK, with 114 take-offs per week.

Figure 2-4 illustrates the air routes with the highest number of seats offered per week. The top three are Barcelona – Madrid, London Heathrow – New York JFK and Milan – Rome with 59,000, 33,000 and 29,000 seats offered per week in one direction respectively. Altogether, there are two international routes within the top ten. Due to the intercontinental nature of the second-placed route London Heathrow – New York JFK, the demand is served by flights with high seat capacity per aircraft although the weekly flight frequency is comparatively low. The average capacity per flight is 286 (2008: 274) seats on the route London Heathrow – New York JFK, whereas on the route Barcelona – Madrid, the offered capacity is only 156 (2008: 151) seats per take-off on average.

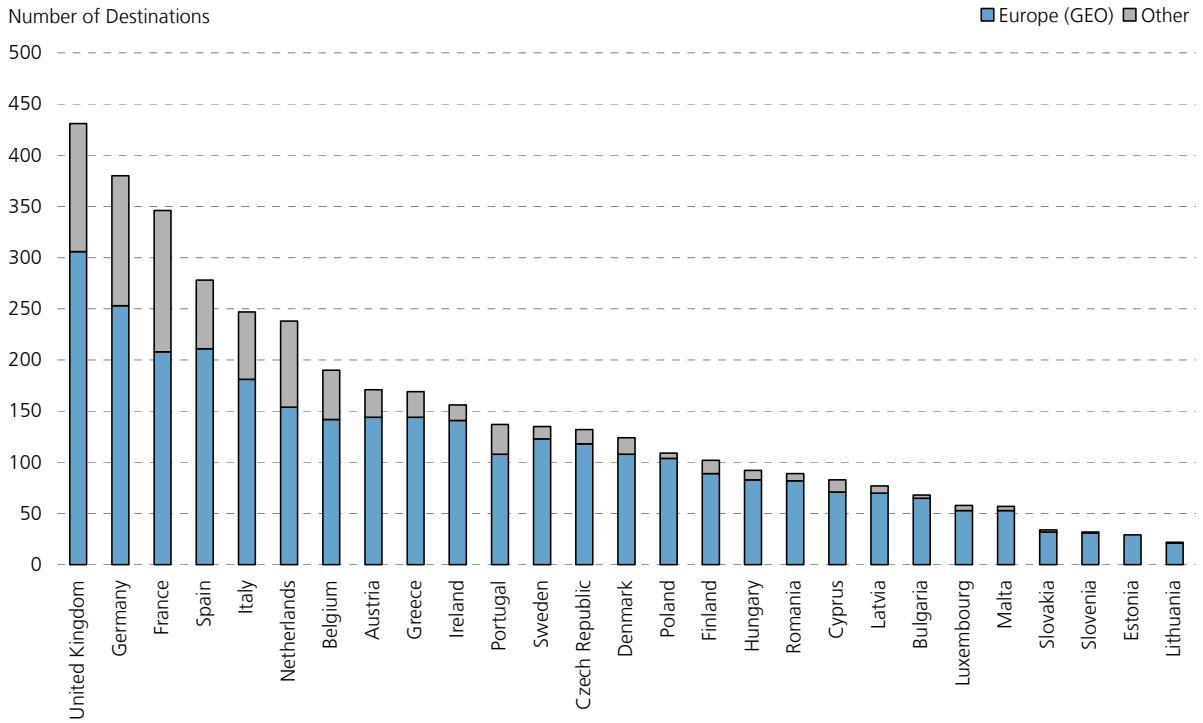
Figure 2-4: Main air routes in Europe in terms of seats offered

Source: OAG 2009

Figure 2-5 shows the number of routes per country in Europe, subdivided by European or intercontinental route.

Figure 2-5: Number of destinations per country

Source: OAG 2009



There is a strong positive correlation between the size of a country and the number of destinations served by its airports. The share of intercontinental routes increases with country size as well. The top three nations in this ranking are the UK, Germany and France, which have both the highest number of destinations and the highest share of intercontinental destinations. A total number of 431 (2008: 441) different destinations are served from the UK, of which 125 (2008: 133) are intercontinental. 380 (2008: 387) destinations are served from German airports, of which 127 (2008: 131) are outside Europe. A total of 346 (2008: 345) destinations are served from France, of which 138 (2008: 138) are intercontinental. Of the top three countries, only France shows a positive development in the number of destinations served.

2.1.3 Supply by airline type

For further analysis regarding airline types, flights are distinguished by those of (abbreviation in brackets):

- Full Service Network Carriers ("FSNCs")
- Low-Cost Carriers ("LCCs")
- Regional Carriers ("Regionals")
- Holiday / Charter Carriers ("Charters")

A "full service network carrier" is an airline that focuses on providing a wide range of pre-flight and onboard services, including different service classes, and connecting flights. Since most FSNCs operate a hub-and-spoke model covering a wide geographical area, this group of airlines is usually also referred to as hub-and-spoke airlines. They usually employ a complex yield management system.

Low-Cost Carriers, on the other hand, focus on cost reduction in order to implement a price leadership strategy on the markets they serve. Important issues in implementing such a price leadership strategy are e.g. relatively high load factor, the use of small airports to avoid high airport fees and congestion, a young and homogeneous aircraft fleet for efficient maintenance and training, and offering only point-to-point services mainly on short and medium-distance routes in order to reduce turnaround times and costs of coordination.

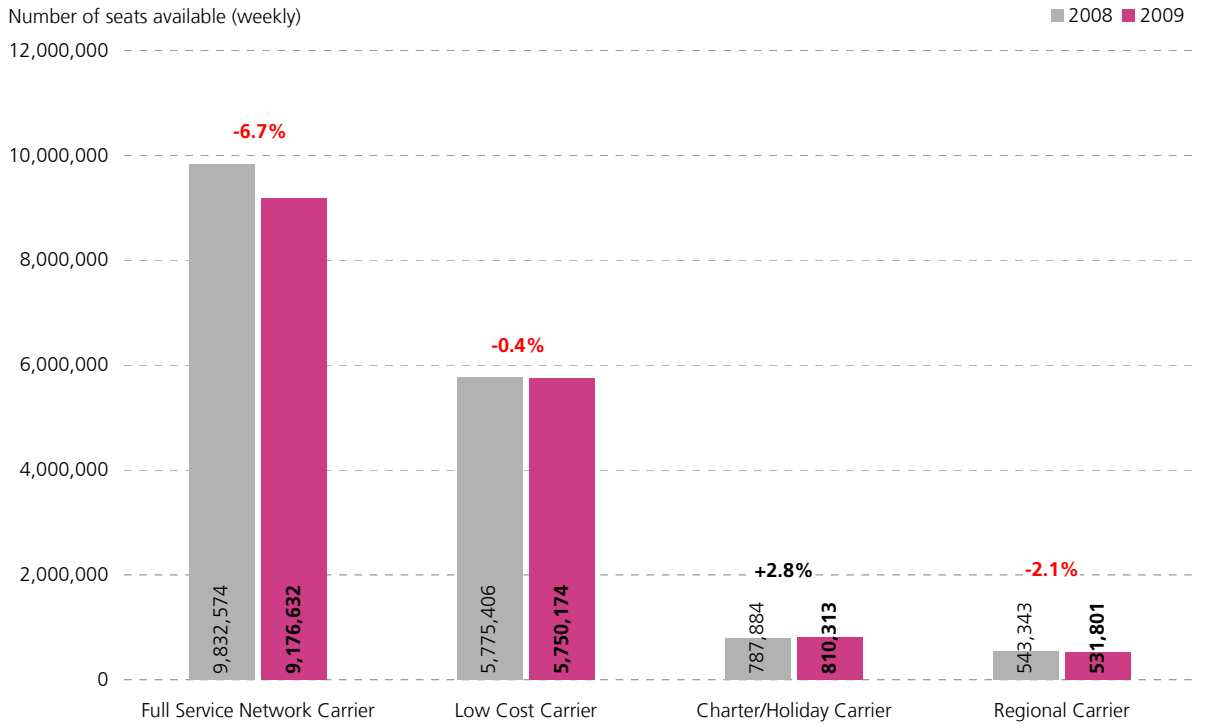
Regional airlines, also called commuter airlines or feeder airlines, generally use smaller aircraft with 20-100 seats and restrict their flight routes to a geographically limited area. While some regional carriers operate independently and focus on decentralised point-to-point flights between smaller airports, others work as feeder airlines for FSNCs and connect their partner airline's hub with regional airports in the hinterland.

Holiday / charter carriers are airlines that focus on the transportation of tourists. Like LCCs, leisure carriers achieve low costs per seat mile in focusing on direct point-to-point flights using homogenous fleets of medium to large aircraft with high-density seating. However, leisure carriers usually offer full tourist class onboard services (meals, non-alcoholic drinks, in-flight entertainment on shared video screens, newspapers and magazines, toys for children). Holiday airlines do not generally sell tickets directly to their customers, but instead through ticket offices and travel agencies as part of package tours. The number of airlines in this group is smaller than in the others, since the role of package tour flights has continuously decreased during recent years, with consistently more seats being sold individually. The elimination of the distinction between charter and scheduled airline traffic in the EU has led to an increasing number of holiday flights being classified as scheduled traffic. Furthermore, more and more destinations now overlap with those served by Low-Cost Carriers.

FSNCs supply 57% of the weekly seats available at European airports in 2009, followed by LCCs offering 35% of the total capacity. In contrast, Charter carriers and Regionals have respective shares of only 5% and 3%. Figure 2-6 illustrates these relations in absolute figures for the years 2008 and 2009. Compared to 2008, there is a decrease in seat capacity offered by FSNCs, LCCs and Regionals. However, there is a slight increase in seat capacity offered by Charter carriers.

Figure 2-6: Distribution of EU air transport by carrier type

Source: OAG 2009



Looking at each airline type in more detail regarding market concentration, it can be seen that the top 25 (top 10) European FSNCs cover 84% (61%) of the seat capacity in this category. Concentration is even higher for charter carriers: the top 25 (top 10) charter carriers cover 99% (89%) of the charter market, which is higher than in the low-cost market, where the top 25 LCCs provide 98% (82%) of the flights. Market concentration is comparatively low for regional carriers: the top 25 in this category cover 86% (59%) of their market. If the scope is extended to the top 40 airlines in each category, the general picture does not change much. Almost the entire market is served by the top 40 FSNCs, Charters, LCCs and regional carriers (92%, 100%, 100% and 95% respectively).

The top 25 airlines in each of the aforementioned four categories are studied in more detail below, as most of the relevant market is covered by its top 25 airlines.

2.1.3.1 Full Service Network Carriers ("FSNCs")

Figure 2-7: Top 25 FSNCs in Europe in terms of flights per week

Source: OAG 2009

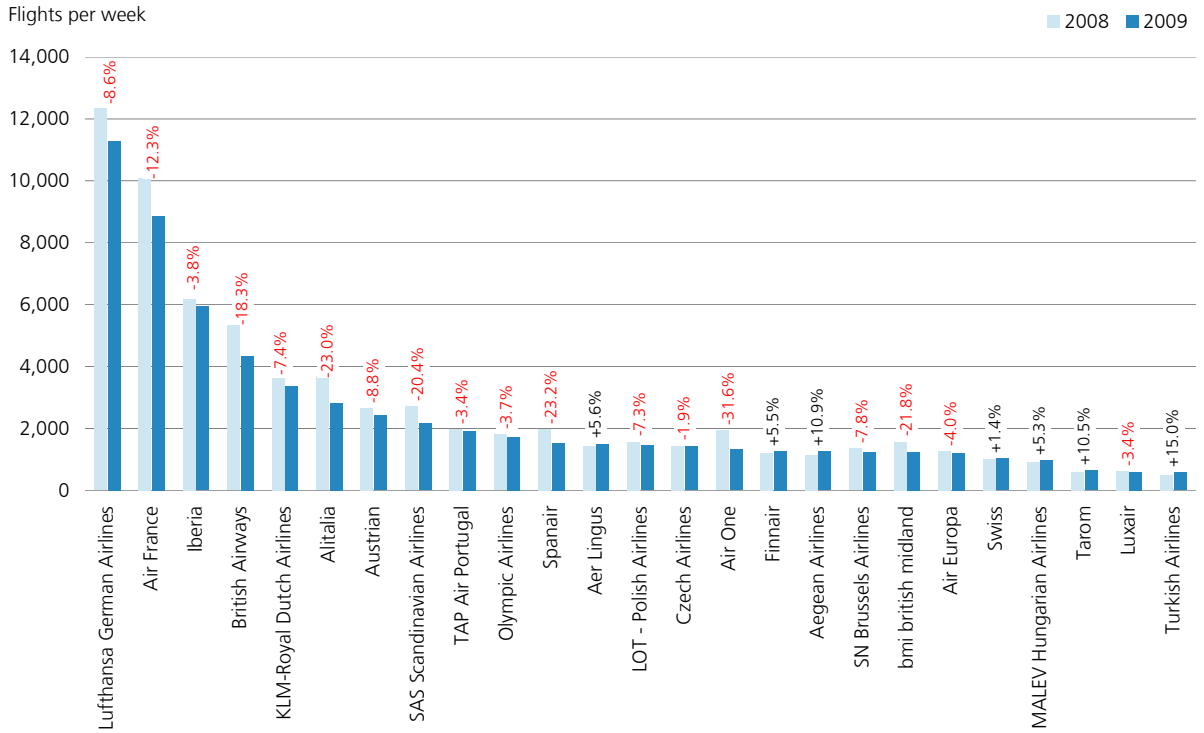


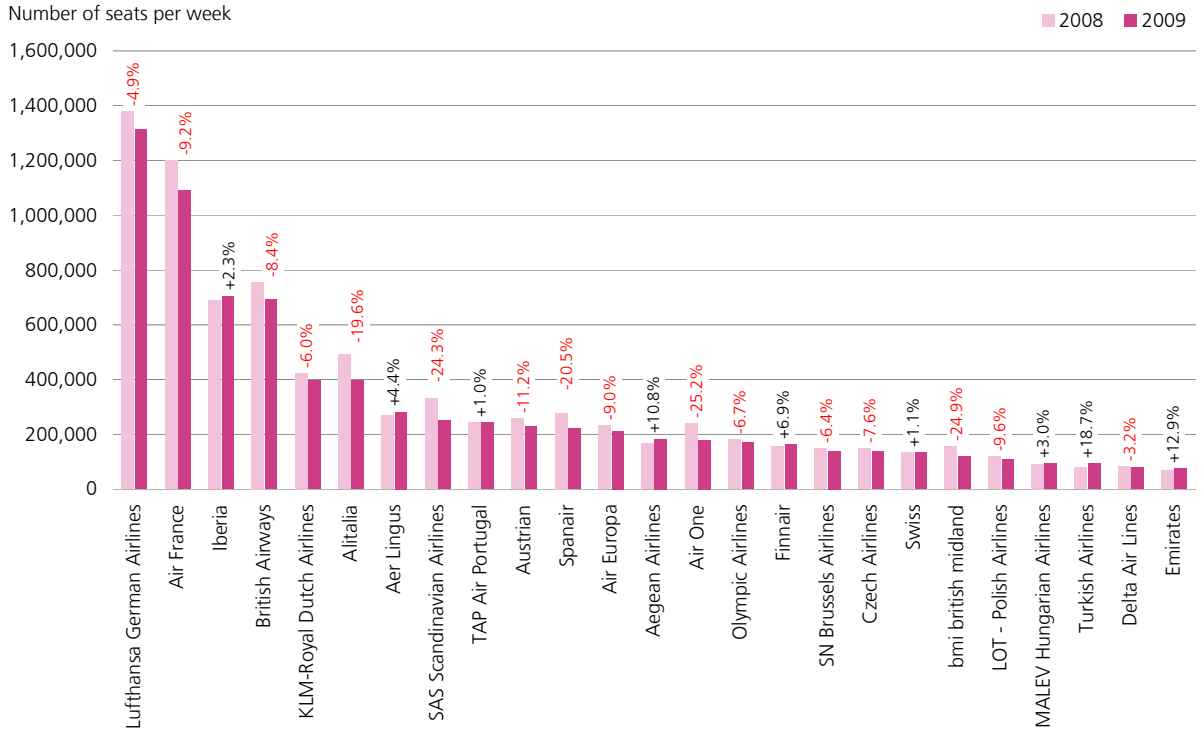
Figure 2-7 shows the top 25 FSNCs in Europe (EU-27) for 2008 and 2009 as regards weekly flights. The top 2 airlines are Lufthansa and Air France with nearly 11,200 flights and almost 8,900 flights per week respectively. Iberia and British Airways follow with 5,900 and 4,300 flights per week respectively. As Figure 2-7 demonstrates, the FSNC market is concentrated on around eight large airlines. The total market volume is about 70,000 flights, with 9.2 million seats offered per week in 2009. The average seat capacity per flight for 2009 is 131. Overall, there have been considerable declines in the number of flights offered in almost every case in the top positions and the midfield. These declines reach as much as -32%.

Figure 2-8 shows the top 25 FSNCs in Europe (EU-27) in terms of seats offered per week for 2008 and 2009. The ranking is unchanged within the top rankings. Here, British Airways and Iberia switched places compared to the ranking in 2008. In many cases, there have been considerable declines in the number of seats offered due to the recession and resulting economic pressure on airlines; however, these changes are not as big as in the case of the number of flights, thus resulting in a larger average seat capacity per flight to achieve more efficiency. Striking examples are Alitalia, SAS and Spanair: Alitalia was restructured in 2009 and reduced its international flights by more than 25%. SAS incurred large economic losses in 2008 and was restructured. For example, personnel were reduced by about 40% and the number of flights was reduced significantly, as Figure 2-8 shows. Spanair has been trying to reduce costs

radically since the second half of 2008 (e.g. because of the high oil price) and therefore reduced the number of flights offered. 9 destinations are deleted temporarily from their destination list.

Figure 2-8: Top 25 FSNCs in Europe in terms of seats per week

Source: OAG 2009



2.1.3.2 Low-Cost Carriers ("LCCs")

Figure 2-9 shows the top 25 LCCs in Europe (EU-27) for 2008 and 2009 in terms of weekly flights. The four biggest LCCs are Ryanair, easyJet, Air Berlin and Flybe, with 24%, 18%, 11% and 9% shares of all LCC flights per week respectively. Figure 2-9 also shows the relatively high concentration in the low cost carrier market with the four dominating airlines having a combined share of almost two thirds of all LCC flights and a relatively large number of carriers of about the same size following on places 5 to 25. The market volume is about 38,000 flights per week and approximately half of the FSNC market. Average seat capacity per flight is 135 seats (2008: 156) – four seats more than FSNCs offer on average. There are, in many cases, large increases in the number of flights offered compared to 2008. Ryanair and easyJet managed to increase the number of flights they offered by 16% and 8% respectively. However, some very small Low-Cost Carriers offered up to twice as many flights in 2009 as in 2008, but their high percentage growth is mainly due to their small size.

Figure 2-9: Top 25 LCCs in Europe in terms of flights per week

Source: OAG 2009

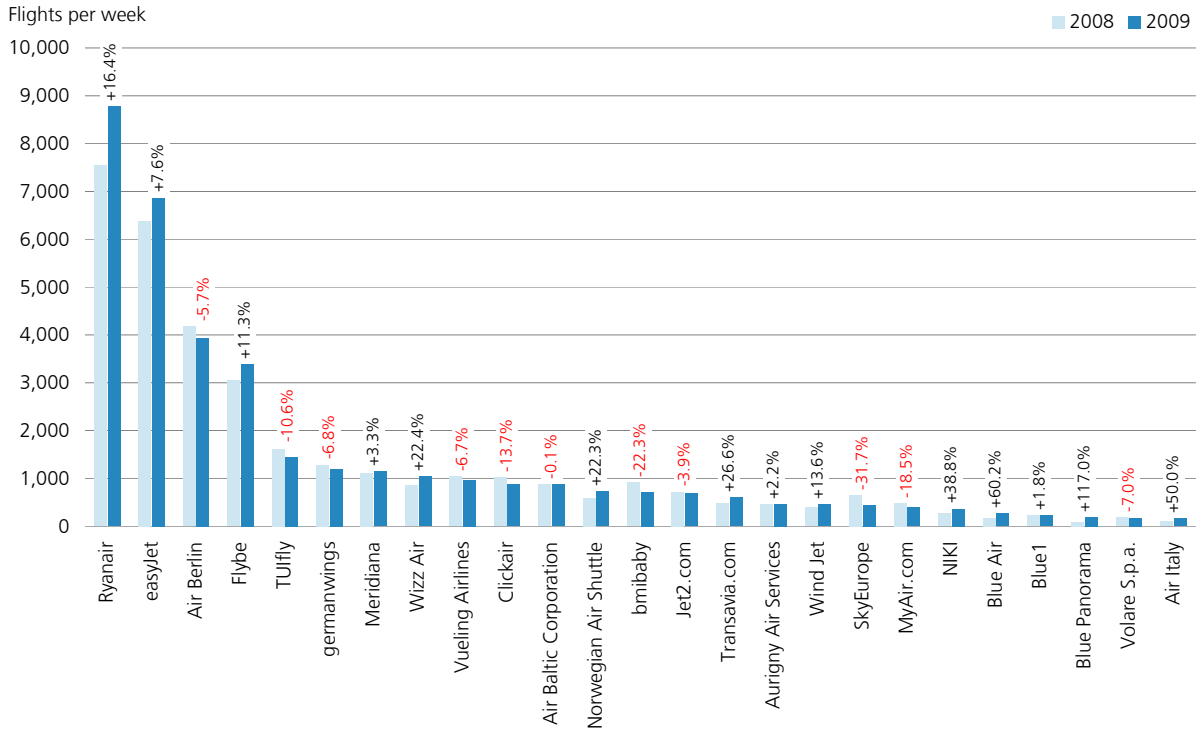


Figure 2-10: Top 25 LCCs in Europe in terms of seats per week

Source: OAG 2009

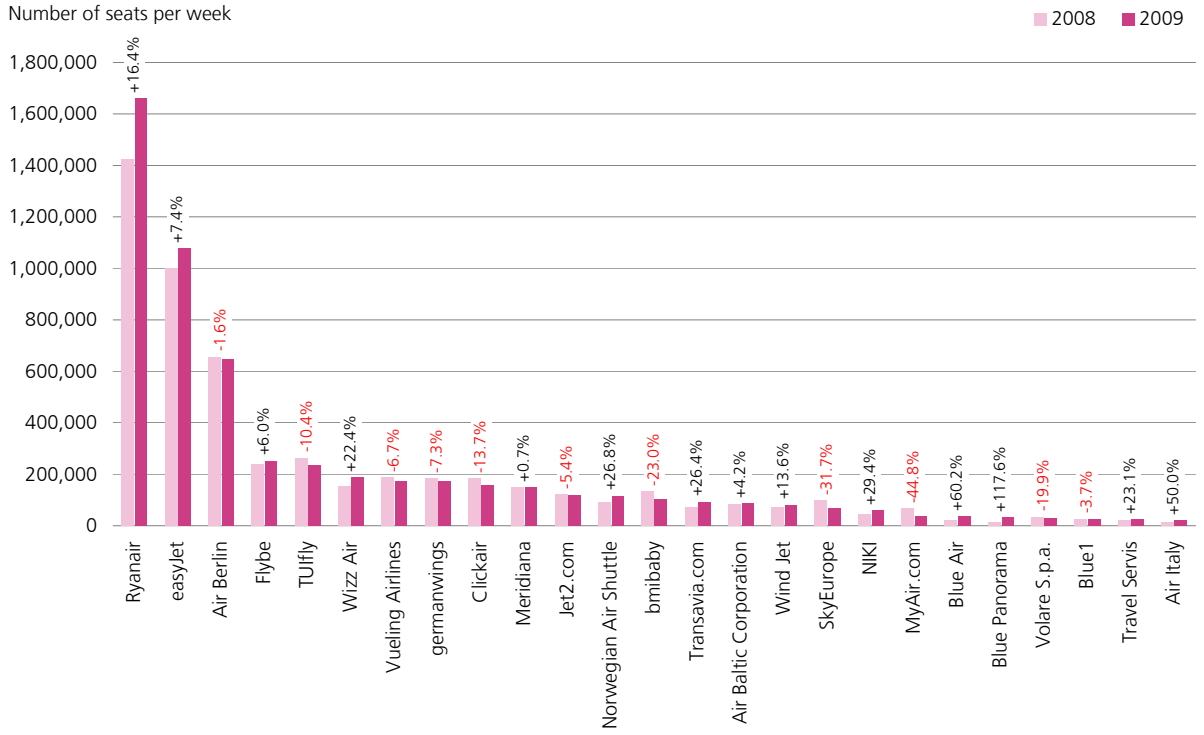


Figure 2-10 shows the top 25 LCCs in Europe (EU-27) in terms of seats offered for 2008 and 2009. The top rankings are largely unchanged; the changes, compared to 2008, are similar to the case of number of flights offered. However, in terms of seats offered, Ryanair extends its lead over the other carriers. The number of seats offered ranges from 1.6 million for Ryanair to 21 thousand for Air Italy.

2.1.3.3 Regional Carriers ("Regionals")

Figure 2-11: Top 25 Regionals in Europe in terms of flights per week

Source: OAG 2009

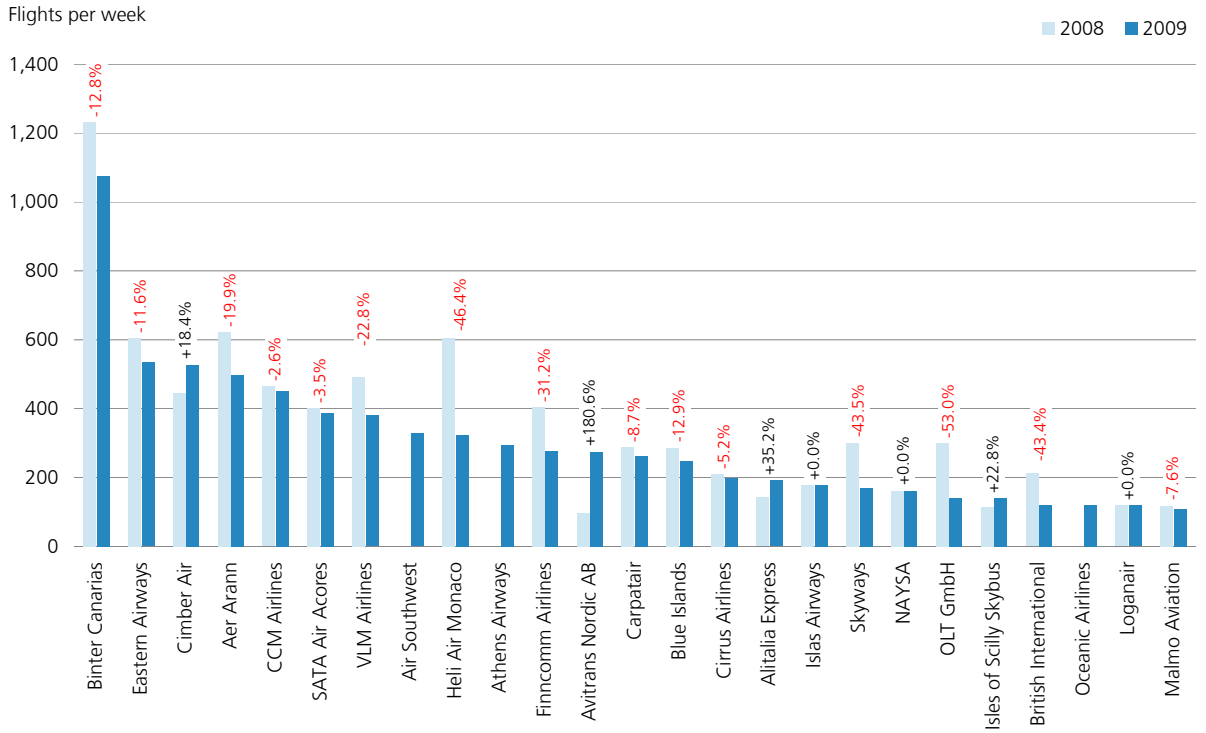
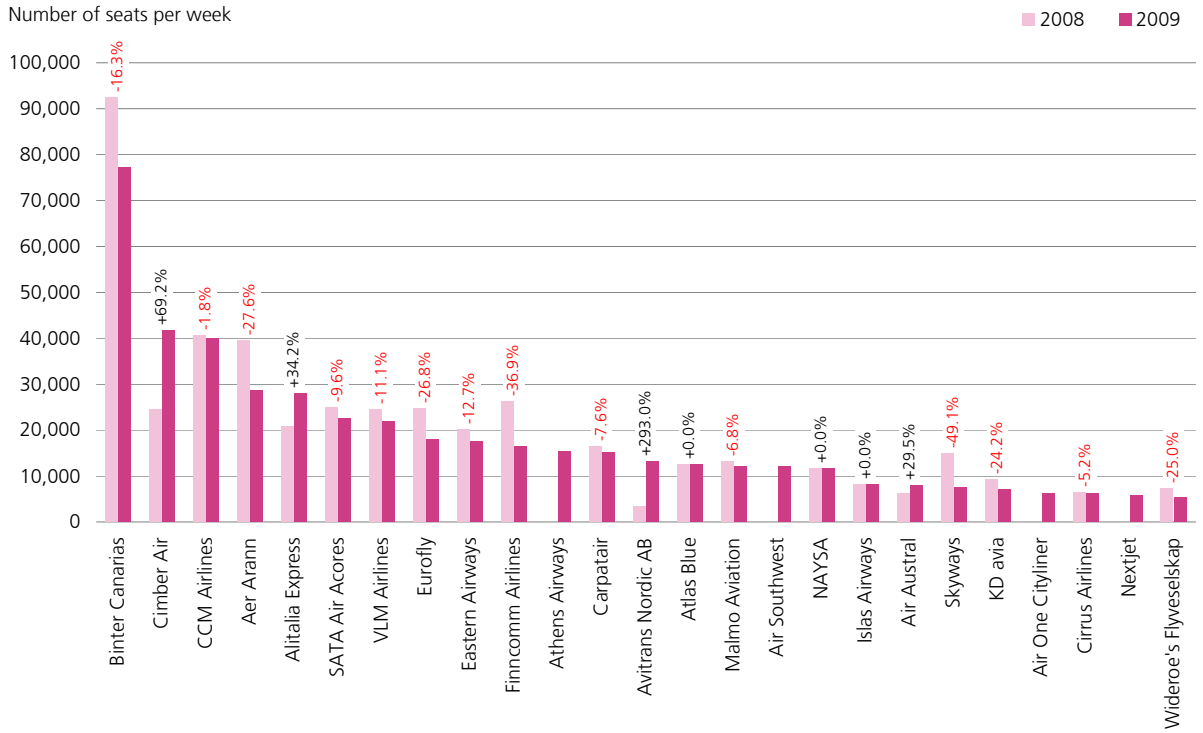


Figure 2-11 shows the top 25 Regionals in Europe (EU-27) for 2008 and 2009 in terms of weekly flights. The two biggest Regionals are Binter Canarias and Eastern Airways with 1,074 and 534 flights per week respectively. Changes compared to 2008 for these two airlines lie within a range of about -12%. Changes in the number of flights offered lie within a much broader range for smaller airlines: they vary from 180% to -53%. Market volume is 8,946 flights and 531,801 seats per week, which is again only a fraction of the FSNC supply. The average seat capacity per flight is 59 (2008: 57), caused by the high share of short-haul and feeder flights with regional aircraft such as ATR 42 and Canadair Regional Jet. Most Regionals reduced their supply of flights compared to 2008 due to the economic downturn; however, Cimber Air is one of the few top Regionals who managed to increase their supply of flights. The main reason for this is the take-over of the airline Sterling, which went bankrupt.

Figure 2-12 shows the top 25 Regionals in Europe in terms of seats offered per week for 2008 and 2009. The ranking differs significantly from the flights per week ranking. Binter Canarias leads by a large margin; however, the rankings have changed considerably between places 2 and 25 compared to Figure 2-11, one reason being the wide range of average seat capacity per flight resulting from different aircraft types employed. Changes in the number of seats offered per week range from 69% to -16% for the top three airlines, which represent nearly a third of the whole supply by Regionals in 2009. However, in the case of smaller airlines there are changes of up to 293% compared to 2008. Average seat capacity per flight ranges from 5 for Heli Air Monaco, which is a helicopter service, to 202 for Eurofly. The Regionals are very heterogeneous as a result of the majority of them being rather small.

Figure 2-12: Top 25 Regionals in Europe in terms of seats per week

Source: OAG 2009



2.1.3.4 Holiday / Charter Carriers ("Charters")

Figure 2-13: Top 25 charter airlines in Europe in terms of flights per week

Source: OAG 2009

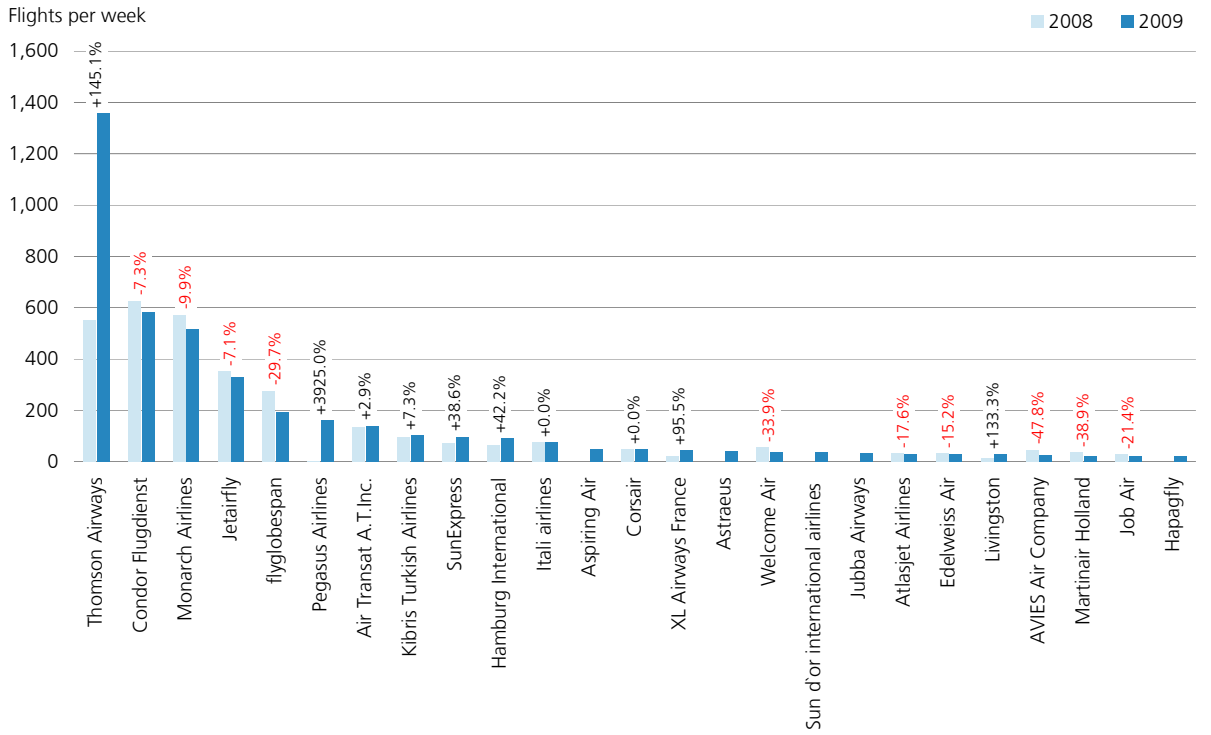


Figure 2-13 shows the top 25 charter airlines in Europe (EU-27) for 2008 and 2009 in terms of weekly flights. The four biggest charter airlines are Thomson Airways, Condor Flugdienst, Monarch Airlines and Jetairfly with 1,358, 581, 516 and 328 flights per week, respectively. Thereafter, charter airlines become rapidly smaller in terms of flights per week. Total supply is 4,197 flights and 810,313 seats per week, which is only a fraction of the FSNC market. However, the market is again concentrated on around six to seven airlines. The weekly flight frequency has again declined in most cases in 2009 as a result of the economic downturn since the second half of 2008. However, there are some airlines which increased the number of flights offered in 2009, e.g. Thomson Airways, Pegasus Airlines and Livingston. Due to organisational restructuring, many flights which were formerly offered by Thomson Airways and First Choice Airways are now operated by Thomson Airways, resulting in the largest airline of the charter sector. The average seat capacity per flight of 193 seats is significantly higher than the corresponding value of other airline types, one reason being the need to keep the seat-km costs low and the airlines' operational possibility of limiting flight frequencies.

Figure 2-14: Top 25 charter airlines in Europe in terms of seats per week

Source: OAG 2009

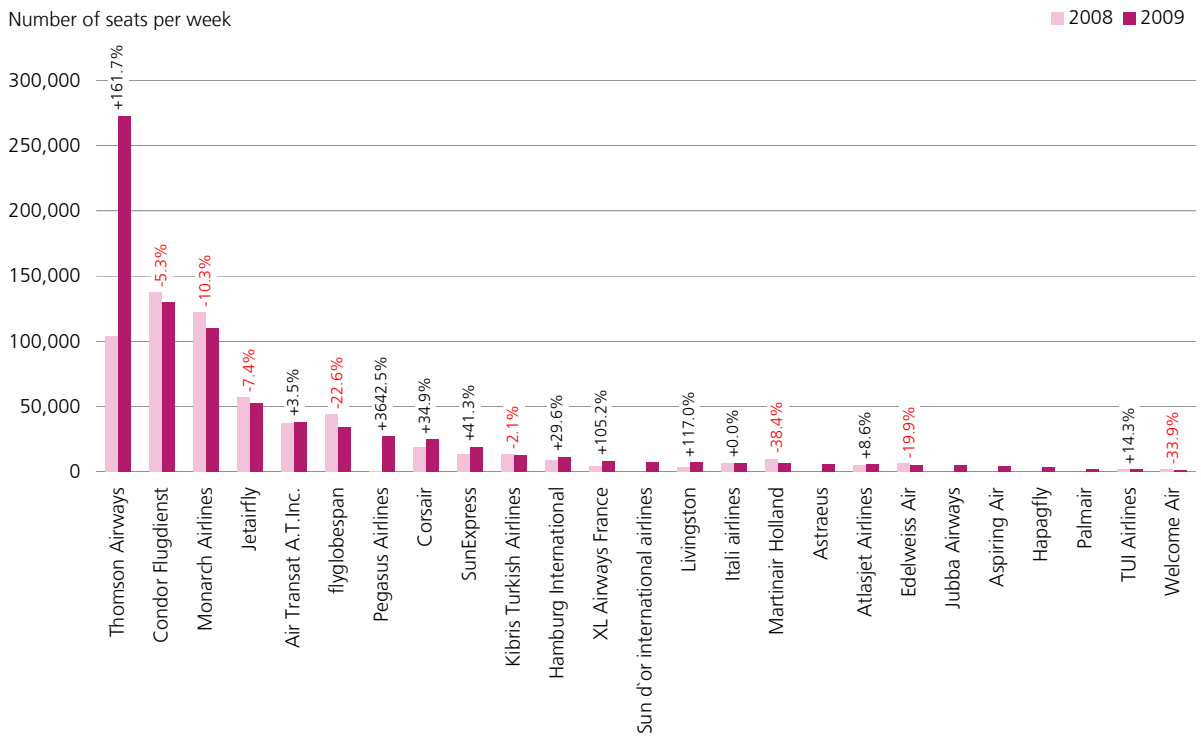


Figure 2-14 shows the top 25 charter airlines in Europe (EU-27) in terms of seats offered per week for 2008 and 2009. The ranking is largely unchanged within the top rankings, with Thomson Airways, Condor Flugdienst, Monarch Airlines and Jetairfly occupying the first four places. Changes compared to the previous year are similar to the former case of flights offered per week.

2.1.4 Air transport demand

Due to companies entering and exiting the market, as well as consolidation processes, the total number of airlines worldwide is changing constantly. This analysis therefore includes only a sub-total of the number of airlines. In order to give a comprehensive overview of the world's major airlines, the data used in this chapter is based on data provided by Ascend Online Fleets as it shows the monthly performance figures for over 300 major airlines.

All figures are presented using the same format. This shows not only the type of airline and geographical region, but also the 2009 traffic data and airline ranking (based on revenue passenger kilometres) compared to the same time span in 2008 and 2007. To aid comparison, each airline is given both a ranking for its class and an overall ranking based on all categories analysed. In order to give a comprehensive overview of the airline situation, the analysis is mainly based on the number of passengers carried, revenue passenger kilometres, available seat

kilometres as well as the average airline load factor. Other aspects, such as transport distance per passenger, are also taken into account.

The classification of airlines follows a model used by the DLR's Institute of Air Transport and Airport Research in other publications. Since other chapters are based on the DLR classification and in order to simplify the comparison of the data in this chapter with other topics in this report, this classification has been used throughout this chapter.

2.1.4.1 Full Service Network Carriers ("FSNC")

The following Table 2-1 gives an overview of the 50 leading Full Service Network Carriers in 2009 and ranks the airlines according to individual performance in terms of revenue passenger kilometres.

Taking a look at the geographical spread within this airline class, 14 European airlines (whereof 10 EU-27 airlines), 8 North American airlines, 20 airlines originating from the Asia-Pacific region, 2 from Latin America, 4 Middle Eastern airlines and 2 African airlines are to be found among the top 50 FSNCs.

In contrast to previous years, American Airlines is no longer the leading airline in this ranking. Despite achieving the absolute highest number of transported passengers, the airline occupied only the second position in terms of passenger kilometres (197 billion), behind Air France-KLM with just under 200 billion passenger kilometres. Both airlines were affected by the reduction in demand caused by the worldwide economic crisis, as were most of their competitors. However, the resulting loss for the European carrier was smaller, assisting it in obtaining the pole position above all the other airline groups. In 2009, Air France-KLM had to cope with 4.7% fewer passengers than in 2008 and achieved 3.6% fewer revenue passenger kilometres. In contrast, American Airlines lost 7.5% in numbers of passengers and 7.1% in revenue passenger kilometres. In accordance with the reductions, the supply was also thinned out, which resulted in the load factors remaining relatively stable (Air France-KLM +0.4 percentage points, American Airlines +0.1 ppts).

This development reflects the overall tendency of the top 50 FSNC ranking which can be found in the figures below (2-15 to 2-18).

In total, 6 of the top 10 carriers in this class originate from North America, which illustrates the continuing importance of this mode of transport in the United States. Alongside them, 3 major European carriers are to be found in the top 10, led by the first-ranked Air France-KLM Group and followed by Lufthansa (rank 6) and British Airways (rank 8). The Middle-Eastern airline, Emirates Airline, climbed up 2 positions and now occupies rank 7, leaving behind British Airways and Northwest Airlines. The performance figures of the top 10 in this ranking show that around

48% of all revenue passenger kilometres are served by these airlines. In terms of passengers carried and available seat capacity, the share is 42.3% and 44.9% respectively.

Table 2-1: Top 50 FSNCs worldwide

Source: Ascend Online, Airline Business

Rank 2009 RPK (class)	Rank 2009 RPK (TTL*)	Rank 2008 RPK (class)	Airline	Region	PAX (mill)	RPK (mill)	ASK (mill)	PLF (%)
1	1	2	Air France-KLM Group	EU-27	70.3	199,744	250,551	79.7
2	2	1	American Airlines	North America	85.8	197,079	244,339	80.7
3	3	4	Delta Air Lines	North America	67.9	162,156	197,161	82.2
4	4	3	United Airlines	North America	56.1	161,740	197,577	81.9
5	5	5	Continental Airlines	North America	45.6	128,497	156,801	81.9
6	6	6	Lufthansa	EU-27	55.4	122,511	158,268	77.4
7	8	9	Emirates Airline	Middle East	25.9	118,284	155,323	76.2
8	9	8	British Airways	EU-27	32.3	112,371	144,056	78.0
9	10	7	Northwest Airlines	North America	41.1	101,341	121,091	83.7
10	11	10	US Airways	North America	51.0	93,193	113,856	81.9
11	12	13	China Southern Airlines	Asia-Pacific	66.3	92,954	123,383	75.3
12	13	12	Cathay Pacific	Asia-Pacific	24.3	88,932	110,368	80.6
13	14	11	Singapore Airlines	Asia-Pacific	16.3	81,552	107,006	76.2
14	15	15	Qantas	Asia-Pacific	22.8	75,580	91,891	82.2
15	16	14	Japan Airlines International	Asia-Pacific	42.0	73,740	113,140	65.2
16	17	17	Air China	Asia-Pacific	39.8	73,369	95,474	76.8
17	18	16	Air Canada	North America	22.2	71,073	86,604	82.1
18	20	21	China Eastern Airlines	Asia-Pacific	44.0	60,917	84,422	72.2
19	21	20	KOREAN AIR	Asia-Pacific	21.6	57,407	80,616	71.2
20	22	18	ANA - All Nippon Airways	Asia-Pacific	44.2	54,587	84,344	64.7
21	23	19	Thai Airways International	Asia-Pacific	18.5	52,593	72,032	73.0
22	24	22	Iberia	EU-27	20.5	49,594	62,081	79.9
23	26	24	TAM Linhas Aereas	Latin America	29.7	43,817	63,962	68.5
24	28	25	Qatar Airways	Middle East	10.2	40,410	56,413	71.6
25	29	27	Turkish Airlines (THY)	Europe	25.1	40,112	56,545	70.9
26	30	23	Virgin Atlantic Airways	EU-27	5.4	39,282	49,756	78.9
27	32	26	Malaysia Airlines	Asia-Pacific	11.9	32,894	47,838	68.8
28	34	29	Saudi Arabian Airlines	Middle East	18.3	32,231	50,141	64.3
29	35	28	China Airlines	Asia-Pacific	10.0	30,800	40,650	75.8
30	37	36	LAN Airlines	Latin America	15.4	29,834	38,775	76.9
31	38	30	Alaska Airlines	North America	15.6	29,557	37,253	79.3
32	39	31	Alitalia	EU-27	21.7	29,271	44,732	65.4
33	40	41	Hainan Airlines	Asia-Pacific	17.9	28,328	36,743	77.1
34	41	38	Etihad Airways	Middle East	6.3	27,805	37,764	73.6
35	42	33	Swiss	Europe	13.8	27,511	34,355	80.1
36	44	32	Air New Zealand	Asia-Pacific	12.4	26,470	32,884	80.5
37	46	35	Aeroflot Russian Airlines	Europe	8.8	25,986	34,353	75.6
38	47	37	Asiana Airlines	Asia-Pacific	12.4	24,473	34,631	70.7
39	49	34	SAS	EU-27	21.4	23,241	32,440	71.6
40	50	39	EVA Air	Asia-Pacific	6.0	22,689	29,311	77.4
41	52	43	Jet Airways	Asia-Pacific	11.3	21,539	28,455	75.7
42	54	42	TAP Portugal	EU-27	8.4	21,075	30,781	68.5
43	55	40	South African Airways	Africa	6.7	20,980	29,394	71.4
44	56	44	Finnair	EU-27	7.4	19,987	26,257	76.1
45	60	48	Transaero	Europe	5.0	18,733	21,198	88.4
46	61	47	Garuda Indonesia	Asia-Pacific	11.2	18,021	26,020	69.3
47	62	46	Philippine Airlines	Asia-Pacific	9.2	17,528	23,570	74.4
48	63	-	Air India	Asia-Pacific	3.2	17,309	28,255	61.3
49	64	-	Egyptair	Africa	8.3	17,222	25,257	68.2
50	65	45	Austrian Airlines	EU-27	9.8	16,666	22,420	74.3

*Position when all airline types are included.

Within the top 10 group, Emirates Airline is the only carrier which shows positive growth rates in terms of operational performance. The Middle-Eastern airline continues to follow its strategy of expansion. New routes and more frequencies were added to the flight schedule and 17 aircraft were added to the fleet. This network and fleet expansion results in a capacity growth of 20.3% in the time of analysis. Furthermore, revenue passenger kilometres and passenger numbers increased by 17.5% and 15.6% respectively. However, the average load factor decreased by 1.7 percentage points due to higher capacity expansion than RPK growth.

The Chinese carriers, such as China Southern (rank 11), Air China (rank 16) and China Eastern (rank 18), also achieved positive growth rates, partly even double-digit rates in terms of passenger numbers. Going down the list of the top 50 FSNCs, more carriers with the same positive development compared to the preceding year are to be found - mostly from the Middle Eastern region. However, one European airline also stands out: Turkish Airlines (rank 25). The Turkish carrier expanded capacity by 22.1% compared to the preceding year. Passenger numbers and revenue passenger kilometres were up 11.6% and 17.4% respectively. Nevertheless, it can be observed that a slower increase in demand combined with the expansion of capacity resulted in a decline in load factor of almost 2.8 percentage points.

A new entrant in the top 30 carriers in this ranking is LAN Airlines, which now occupies rank 30 (rank 36 in 2008). The Chilean airline based in Santiago experienced a continued strong demand which led to an increase of 10.7% in terms of revenue passenger kilometres. In addition, LAN Airlines extended its capacity by 10.2% and transported 2.2 million more passengers (+16.7%) than in the previous year. However, due to losses in fuel hedging contracts, the South American carrier suffered a sharp reduction in profits in 2009.

Alitalia now occupies rank 32 (rank 31 in 2008). Following the bankruptcy in August 2008, Alitalia has been fully privatized to ensure its long-term viability. Merging with the second largest Italian airline, Air One, the airline is now owned by Compagnia Aerea Italiana (CAI). The Air France-KLM Group holds 25% of the shares together with the option to purchase further shares in 2013. The new Alitalia re-launched its operations in January 2009. Compared with the preceding period, a 4.9% increase in terms of ASK can be observed, but passenger revenue kilometres RPK remain on the level of 2008. Because of this, the passenger load factor dropped by 3.1%.

Figure 2-15 shows airline passenger numbers for 2009, 2008 and 2007, as a total and split according to region. The regions Asia-Pacific, Middle East, Africa and Latin America are grouped under "Airlines Rest".

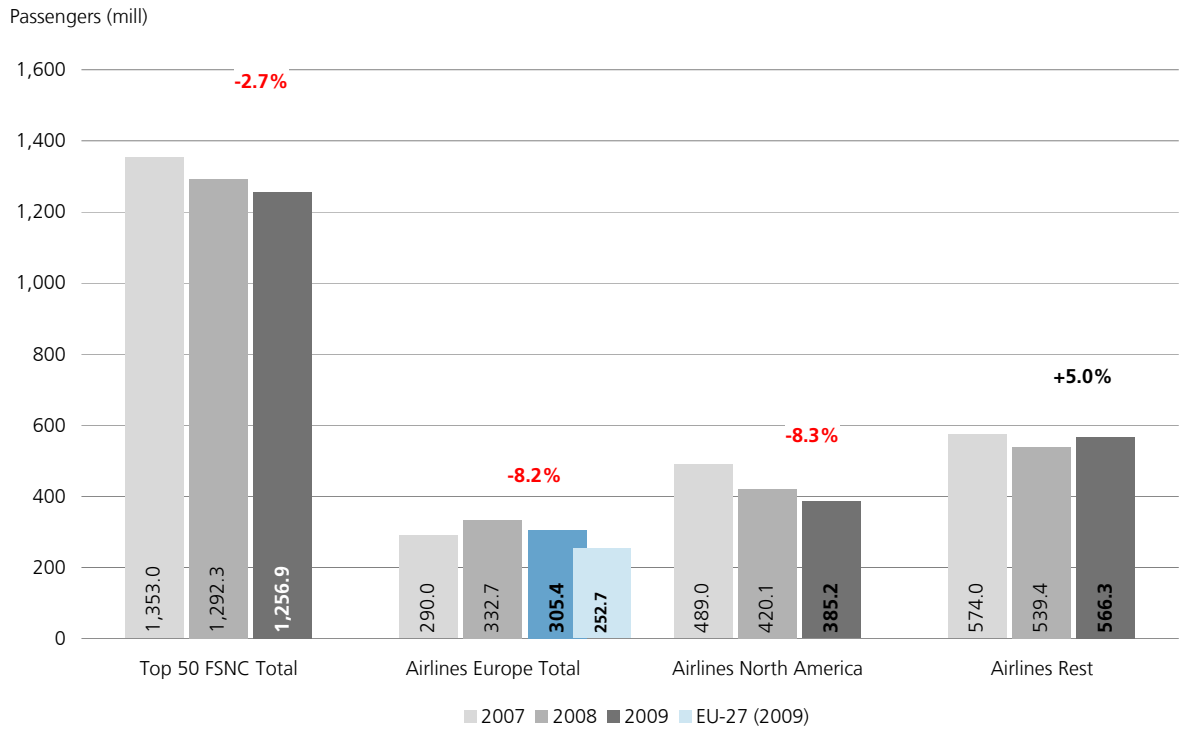
Comparing the periods analysed, the development of demand shows in general a positive trend from 2007 to 2008 for European FSNCs, but turning into a negative growth rate (-8.2%) for 2009. In 2009, the number of passengers carried by the Top 50 FSNCs declined by 2.7%. The distribution of passengers throughout the geographical regions shows that airlines of the rest of

the world account for the largest proportion of passengers carried (45.1%) in the period of analysis. The positive growth rate of this airline group can be explained by the higher number of carriers from these regions in the 2009 ranking (+ 2 airlines compared to 2008).

With a total of 445.4 million passengers, airlines from the Asian-Pacific region show the largest proportion (35.4%), compared to 385.2 million for North American airlines (30.6%). European airlines have a share of 24.3% (305.4 million passengers), whereof 252.7 million passengers were transported by EU-27 airlines which results in a share of 20.1 %. However, considering the limited number of North American carriers in the data set, these figures highlight the size of these airlines compared to their European counterparts.

Figure 2-15 Number of passengers carried by the top 50 FSNCs

Source: Ascend, Airline Business



Figures 2-16 and 2-17 show the shares in terms of revenue passenger kilometres and available seat kilometres for the different geographical regions. The figures for 2009 show an overall decrease of 2.1% and 1.9% respectively compared to the previous year.

Figure 2-16: RPK for the top 50 FSNCs

Source: Ascend, Airline Business

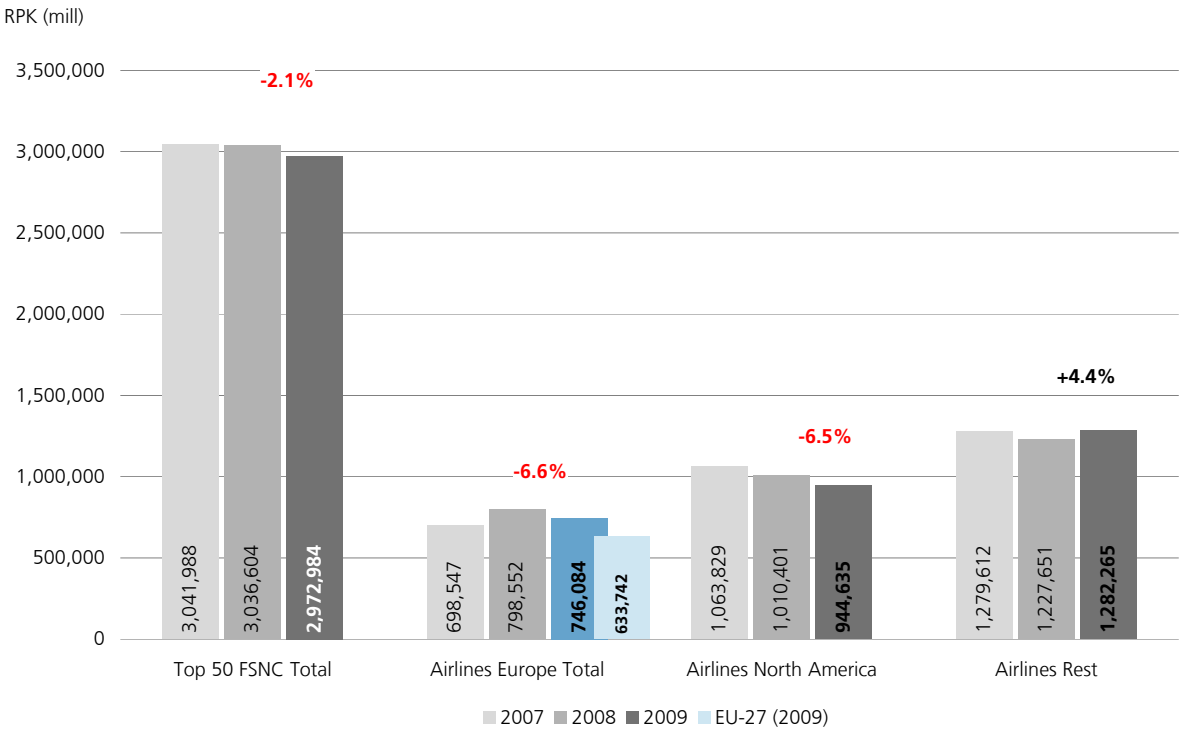
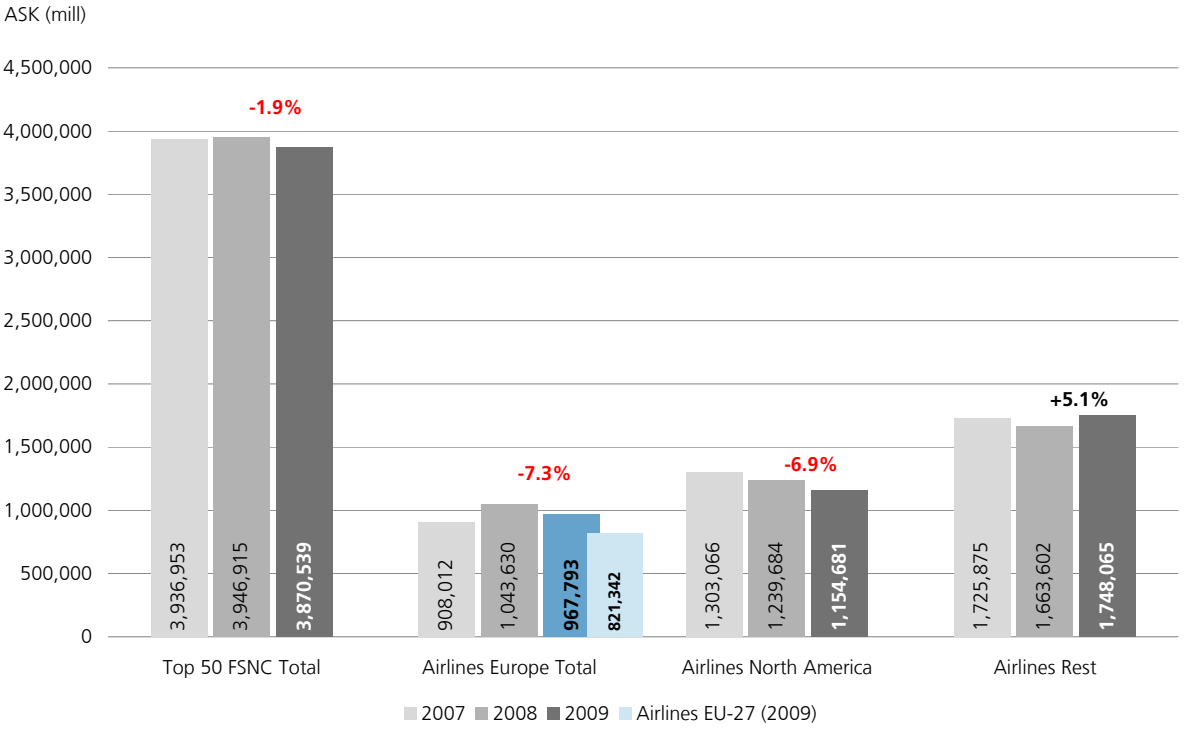


Figure 2-17: ASK for the top 50 FSNCs

Source: Ascend, Airline Business



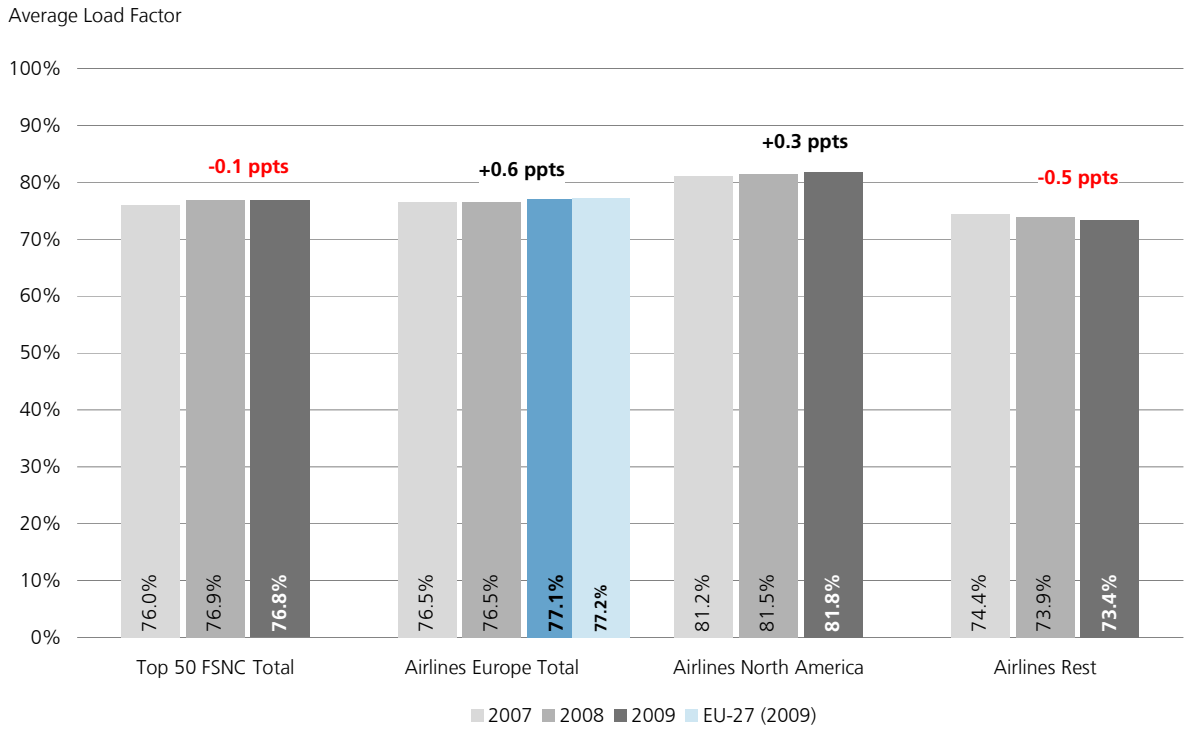
Asian-Pacific airlines represent the largest share of revenue passenger kilometres (32%), closely followed by North American airlines (32.0%) and European carriers with 25.1% (21.3% for EU-27). In terms of available seat kilometres, Asian-Pacific airlines account for around 33.4% and North American for 29.8%, while European airlines show a market share of 25% (21.2% for EU-27).

Comparing 2008 with 2009, the overall average length of passenger haul has slightly increased from 2350 km to 2365 km. Middle Eastern airlines account for the longest average passenger haul of 3601 km due to the operation of primarily international flights.

The ratio of available seat kilometres to revenue passenger kilometres determines the load factor. The average values and the changes (in percentage points; ppts) compared to the previous year are shown in Figure 2-18.

Figure 2-18: Average load factor of the top 50 FSNCs

Source: Ascend, Airline Business



Taking an average for all top 50 airlines gives a load factor of 76.8%, which nearly equals the result of the preceding year of 76.9%. North American airlines show a fairly high load factor of almost 82%. European carriers also managed to increase load factors, despite challenging economic circumstances, by cutting the capacities.

2.1.4.2 Low Cost Carriers (LCCs)

The following Table 2-2 shows the top 25 low-cost airlines in 2009, ranked according to revenue passenger kilometres.

Of the top 25 LCCs, 9 are from Asia-Pacific, 7 are European (6 from EU-27), 7 are from North America, and one each from the Middle Eastern region and Latin America. In contrast to the top 50 FSNC ranking, this class shows a high stability in terms of revenue passenger kilometres (+4.1%) and capacity (+2.4%). In terms of passenger numbers, an increase of 5.2% can be observed. Due to the current economic downturn, LCCs seem to be well-prepared with their low unit cost base. Consumers have become more price-conscious and the premium sector, which is particularly important for FSNCs, declined dramatically. Looking for the best value, business passengers drifted to other business models.

Table 2-2: The top 25 Low-Cost Carriers worldwide

Source: Ascend Online, Airline Business

Rank 2009 RPK (class)	Rank 2009 RPK (TTL*)	Rank 2008 RPK (class)	Airline	Region	PAX (mill)	RPK (mill)	ASK (mill)	PLF (%)
1	7	1	Southwest Airlines	North America	101.4	120,039	158,028	76.0
2	19	2	Ryanair	EU-27	65.3	68,733	83,487	82.3
3	25	4	easyJet	EU-27	39.7	45,236	54,357	83.2
4	27	5	JetBlue Airways	North America	22.4	41,782	52,410	79.7
5	31	3	Air Berlin	EU-27	27.9	39,140	50,660	77.3
6	36	6	AirTran Airways	North America	24.0	29,922	37,498	79.8
7	45	7	GOL Linhas Aereas	Latin America	28.4	26,092	39,988	65.3
8	48	9	Virgin Blue Airlines	Asia-Pacific	18.3	24,409	31,067	78.6
9	51	8	WestJet	North America	14.0	22,264	28,303	78.7
10	57	11	Jetstar	Asia-Pacific	11.4	19,217	24,390	78.8
11	69	13	AirAsia	Asia-Pacific	14.3	15,722	22,047	71.3
12	76	12	Frontier Airlines	North America	9.5	13,887	17,063	81.4
13	86	16	Norwegian Air Shuttle	Europe	10.8	10,601	13,553	78.2
14	89	15	Kingfisher Airlines	Asia-Pacific	11.0	10,449	14,971	69.8
15	90	0	Transavia Airlines	EU-27	5.2	10,336	13,764	75.1
16	95	14	Spirit Airlines	North America	6.1	9,562	12,038	79.4
17	98	22	Virgin America	North America	3.7	8,872	10,764	82.4
18	99	17	Air Arabia	Middle East	4.1	8,472	10,509	80.6
19	108	19	Vueling Airlines	EU-27	8.2	7,499	10,180	73.7
20	112	20	Cebu Pacific Air	Asia-Pacific	8.8	7,111	9,369	75.9
21	118	0	IndiGo Airlines	Asia-Pacific	6.1	6,798	8,624	78.8
22	120	23	SpiceJet	Asia-Pacific	5.4	6,444	8,610	74.8
23	121	18	Germanwings	EU-27	7.2	6,240	7,835	79.6
24	125	0	Chunqiu / Spring Airlines	Asia-Pacific	4.3	5,879	6,251	94.1
25	126	0	Air India Express	Asia-Pacific	2.4	5,868	8,716	67.3

*Position when all airline types are included.

As was the case in the last 2 years, the top 5 account for more than 55% of revenue passenger kilometres within this group. However, compared to the same time span of the preceding year, this is a reduction in market share of 2 percentage points.

Second-placed European carrier Ryanair shows an increase of 13% in terms of passenger numbers, which reflects the continuous strong market position of this carrier. In contrast, Germanwings at rank 23 lost about 5% of its demand in the period analysed. In between, with slight increases, easyJet can be found. EasyJet managed 4.7% more passengers in 2009.

The leading North American low-cost airline, Southwest Airlines, is significantly bigger than its European equivalents. With 120,039 million revenue passenger kilometres (over 21% of the total in this class), Southwest Airlines is the largest company in this class and even ranks among the world's overall top 10 airlines (rank 7). In contrast, there are numerous relatively small LCCs in Europe.

The ten largest LCCs – in terms of RPK – coped with the difficult times in 2009 in varying ways. Solely the consistently severely reduced load factor demonstrates that they were all faced with similar problems. Of these Top Ten airlines, three (Ryanair, Virgin Blue and Jetstar) have been able to increase not only the passenger numbers and revenue passenger kilometres, but also the available seat kilometres. However, two airlines (Air Berlin and AirTran Airways) were forced to accept losses in all the aforementioned performance indicators. Norwegian Air Shuttle (rank 13), the second-largest airline in Scandinavia, shows even higher growth rates of around 30% in all analysed operational performance figures. The capacity expansion of Norwegian Air Shuttle is related to a network expansion after purchasing the Swedish airline FlyNordic in April 2007 and entering the Copenhagen market in 2008. In addition, the Scandinavian carrier added 17 aircraft to its fleet.

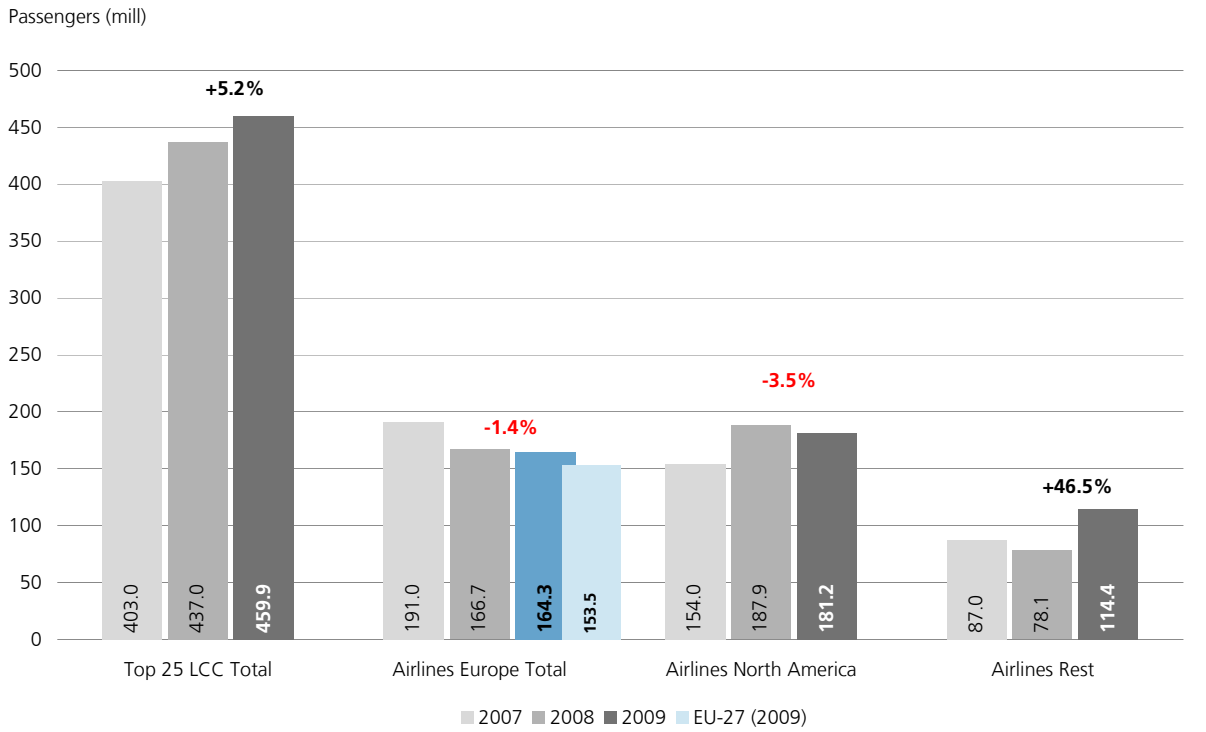
Air Arabia, based in Sharjah in the United Arab Emirates, is also following an expansion strategy despite or maybe even stimulated by the economic climate. Alongside an increase in capacity of almost 40%, passenger numbers and revenue passenger kilometres were up by 13.8% and 19% respectively, resulting in a decline in load factor of 13.7 percentage points. However, the average load factor at Air Arabia (80.6%) for 2009 is still the fourth highest within this ranking.

After filing for Chapter 11 bankruptcy in April 2008 to solve financial issues and to ensure long-term viability, Frontier Airlines (rank 12) cut capacity. In October 2009, the North American carrier emerged from Chapter 11 and is now a wholly-owned subsidiary of Republic Airways Holdings.

Figure 2-19 shows the total number of passengers carried by LCCs worldwide and by region. The highest number of passengers is seen for the North American LCCs. However, the contribution of the European LCCs is greater than that of the "Airlines Rest" group, which are mainly of Asian origin. However, the latter regional category does not follow the overall negative trend in terms of passengers carried. The Asian-Pacific LCCs seem to have a solid demand in their region.

Figure 2-19: Number of passengers carried by the top 25 LCCs

Source: Ascend, Airline Business



Southwest Airlines has a considerable share (22%) of the total number of passengers carried by all of the top 25 LCCs, followed by Ryanair (14.2%), easyJet (8.6%) and JetBlue Airways (4.9%). This means that half of all passengers carried by the top 25 LCCs can be attributed to these four airlines.

Figures 2-20 and 2-21 show the regional breakdown in terms of revenue passenger kilometres and available seat kilometres respectively.

Figure 2-20: RPK for the top 25 LCCs

Source: Ascend, Airline Business

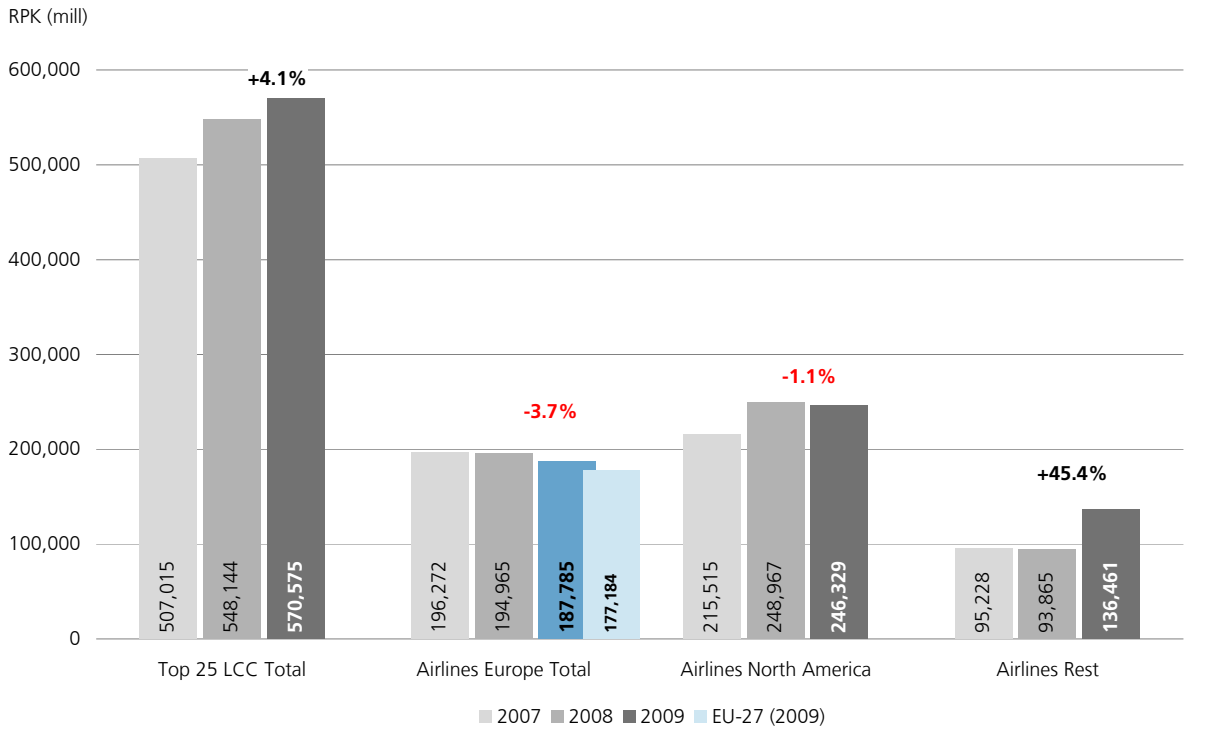
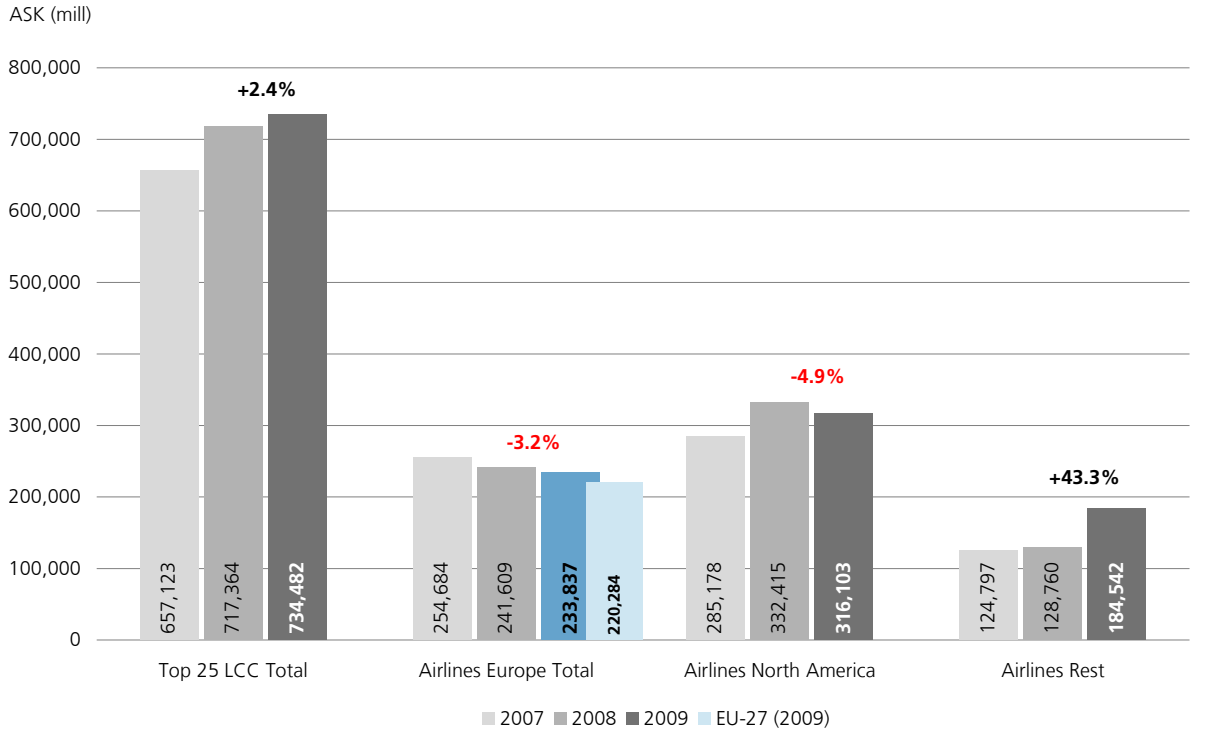


Figure 2-21: ASK for the top 25 LCCs

Source: Ascend, Airline Business



It can be seen that North American airlines make up the highest share as regards revenue passenger kilometres (43.2%), followed by European carriers (32.9%; EU-27: 31.1%). As was the case in the previous figure, Asian-Pacific and the Middle Eastern low-cost airlines increased their capacity considerably, while capacity has been reduced in North America and in Europe.

Regarding the average length of passenger haul, the Middle Eastern airlines show the longest travel distances (2083 km). The global average of distances travelled was 1240 km. Europe shows a slightly lower value of 1143 km. Due to Europe's geographical structure, shorter city pairs are usually more often offered here than in other regions such as North America. However, the developments show an increase in passenger haul. LCCs are entering the traditional holiday market, expanding their routes to holiday destinations.

In particular, Air Berlin, a hybrid business model which cannot be counted as a traditional LCC, took over the German leisure airline LTU in March 2007. Its destinations include the Mediterranean region, the Canary Islands and North Africa. In addition, Air Berlin agreed a strategic partnership with TUI Travel in March 2009, which led to a shift of several European TUIfly routes. Furthermore, Air Berlin´s network also includes intercontinental destinations. Other European LCCs are, however, also taking their chances in this segment.

Figure 2-22: Average seat load factor for the top 25 LCCs

Source: Ascend, Airline Business

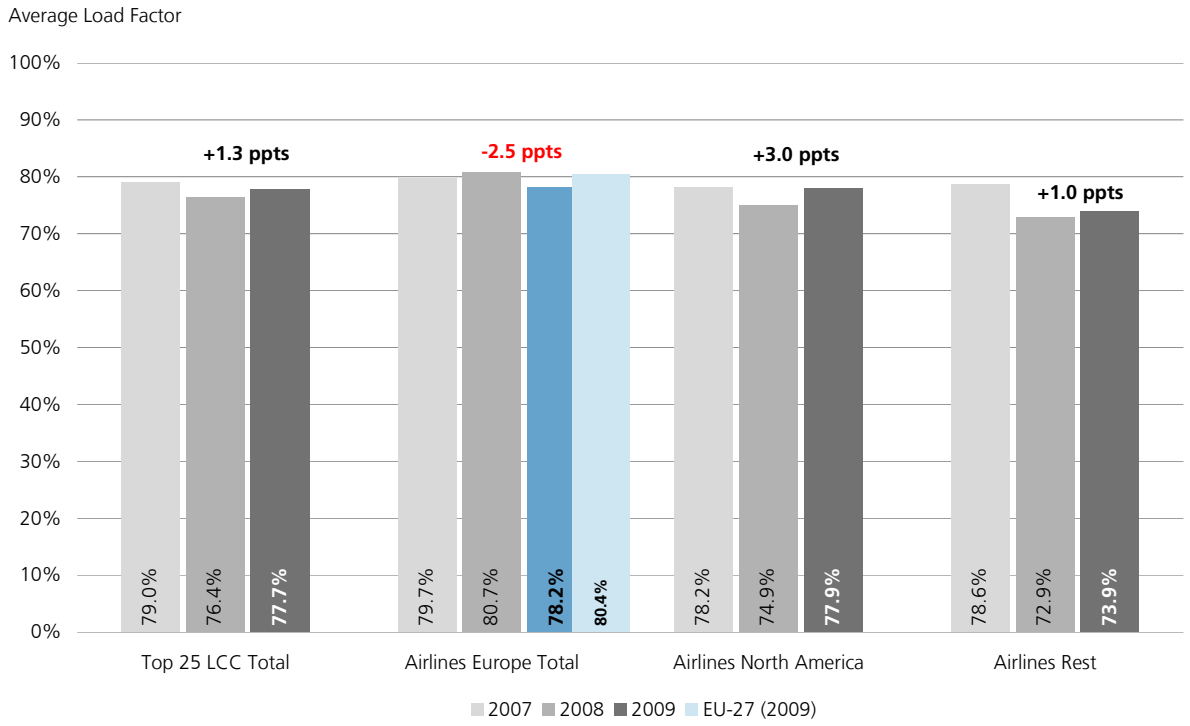


Figure 2-22 shows the load factor by geographic region. For the top 25 LCCs, the average seat load factor is 77.7%, which reflects the high stability of this class compared with the FSNCs.

European airlines show a decreasing but still above-average load factor of 78.2% (EU-27: 80.4%).

A noticeable difference here is the seat load factor achieved by Low-Cost Carriers compared to that of FSNCs. Whereas the European LCCs have an average load factor approximately 3 percentage points above that of European FSNCs, the reverse is true for the North American airlines (FSNC load factor of 81.8% versus 77.9% for LCCs). European LCCs still differ from the traditional airlines with respect to their business concept (low overheads, high load factor).

2.1.4.3 Regional carriers

The following Table 2-3 gives an overview of the top 25 regional airlines in 2009. Against the overall trend, a general increase in operational performance can be observed: passenger numbers show a double-digit increase of 13%, revenue passenger kilometres are up by 5.9%, capacity has been increased by 5.6% and the load factor slightly increased by 0.2 percentage points.

Table 2-3: The top 25 regional carriers worldwide

Source: Ascend, Airline Business, ATI (LH CityLine data)

Rank 2009 RPK (class)	Rank 2009 RPK (TTL*)	Rank 2008 RPK (class)	Airline	Region	PAX (mill)	RPK (mill)	ASK (mill)	PLF (%)
1	53	2	Shenzhen Airlines	Asia-Pacific	15.1	21,351	26,529	80.5
2	59	1	SkyWest Airlines	North America	21.2	18,867	24,150	78.1
3	78	6	Xiamen Airlines	Asia-Pacific	11.1	13,184	17,615	74.8
4	79	4	Hawaiian Airlines	North America	8.3	13,121	15,642	83.9
5	80	3	ExpressJet Airlines	North America	13.4	12,925	16,793	77.0
6	82	8	Sichuan Airlines	Asia-Pacific	9.2	12,368	15,465	80.0
7	83	5	American Eagle Airlines	North America	16.0	11,503	15,791	72.8
8	97	7	Atlantic Southeast Airlines	North America	13.2	9,258	11,619	79.7
9	102	9	Mesa Airlines	North America	11.0	7,764	10,116	76.8
10	105	15	Allegiant Air	North America	5.3	7,666	8,772	87.4
11	107	16	Republic Airlines	North America	8.9	7,529	9,915	75.9
12	110	11	Dragonair	Asia-Pacific	6.0	7,478	10,498	71.2
13	111	10	Pinnacle Airlines	North America	10.8	7,470	9,833	76.0
14	115	12	SAS Norge	EU-27	8.9	6,962	10,209	68.2
15	124	14	Air Canada Jazz	North America	8.8	5,889	8,680	67.8
16	130	-	Mesaba Airlines	North America	6.7	5,328	7,119	74.8
17	131	-	China Xinhua Airlines	Asia-Pacific	3.6	5,170	6,397	80.8
18	132	13	Comair	North America	6.3	5,147	7,047	73.0
19	134	21	Shuttle America	North America	5.2	5,066	7,143	70.9
20	135	-	Orenair	Europe	1.6	4,941	5,115	96.6
21	137	-	Thai AirAsia	Asia-Pacific	5.0	4,812	6,356	75.7
22	138	18	Lufthansa CityLine	EU-27	6.4	4,243	6,081	69.7
23	146	20	Chautauqua Airlines	North America	6.0	4,015	5,446	73.7
24	150	22	Horizon Air	North America	6.8	3,878	5,302	73.1
25	155	-	Compass Airlines	North America	3.2	3,691	4,737	77.9

*Position when all airline types are included.

The dominance of North American airlines is obvious: 16 of the top 25 regional airlines are from this region, compared to only three airlines from Europe but six airlines originating from the Asian-Pacific region. In terms of revenue passenger kilometres, North American regional airlines account for around 61.6% this year followed by Asian-Pacific carriers with 30.7%.

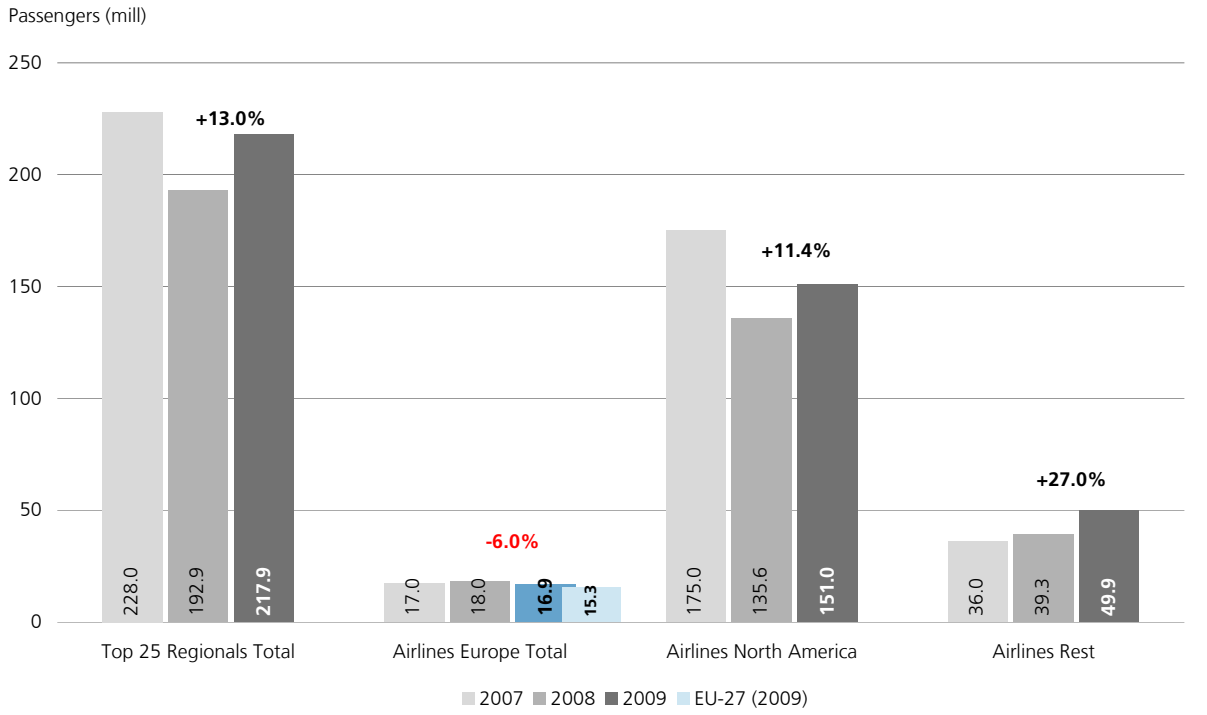
Last year's runner-up, Shenzhen Airlines from China, has now achieved first place in the ranking by increasing the revenue passenger kilometres by 25%. This pushed SkyWest Airlines into second place, despite their growth of 5% (RPK). The North American airline now heads solely the passenger number ranking amongst the total Regional rankings.

Republic Airlines (rank 11), Shuttle America (rank 19) and Chautauqua Airlines (rank 23) belong to Republic Airways Holdings and operate regional flights for major US airlines. In March 2009, Republic Airways Holdings acquired nearly 90% of the Hawaiian regional airline Mokulele Airlines. Midwest Airlines and Frontier Airlines have also been wholly-owned subsidiaries of this company since mid-2009. As a result of the operating partnership established with Mokulele Airlines in October 2008, Shuttle America started to feed the Honolulu hub using three aircraft. In addition, Shuttle America started to replace Delta Shuttle´s operations between New York and Washington at the end of 2008. The operational performance figures for 2009 show a double-digit increase (+14.7% RPK) compared with the preceding period of 2008, which can be explained by the aforementioned developments.

The dominance of North American airlines in this class is also illustrated by the following chart. The highest number of passengers is seen for the North American airlines (69.3%), followed by Asian-Pacific regional airlines (22.9%).

Figure 2-23: Number of passengers carried by the top 25 regional carriers

Source: Ascend, Airline Business



Regional carriers have much greater importance in the USA than they do in Europe or Asia, due to the geographical situation on the North American continent and in the USA in particular. In the USA, with its lower population density than in Europe and relatively long distances between metropolitan areas, the demand for domestic aviation is much higher than in Europe. Small airports are used mainly by regional jets, which provide connectivity to the main hubs. In Europe, the outsourcing of regional services is less common than in the USA. Often, FSNCs cover short-distance city pairs themselves. Also, an increasing level of cooperation between airlines and railway operators can be observed, in order to offer trains as feeder services.

Figure 2-24: RPK for the top 25 regional carriers

Source: Ascend, Airline Business

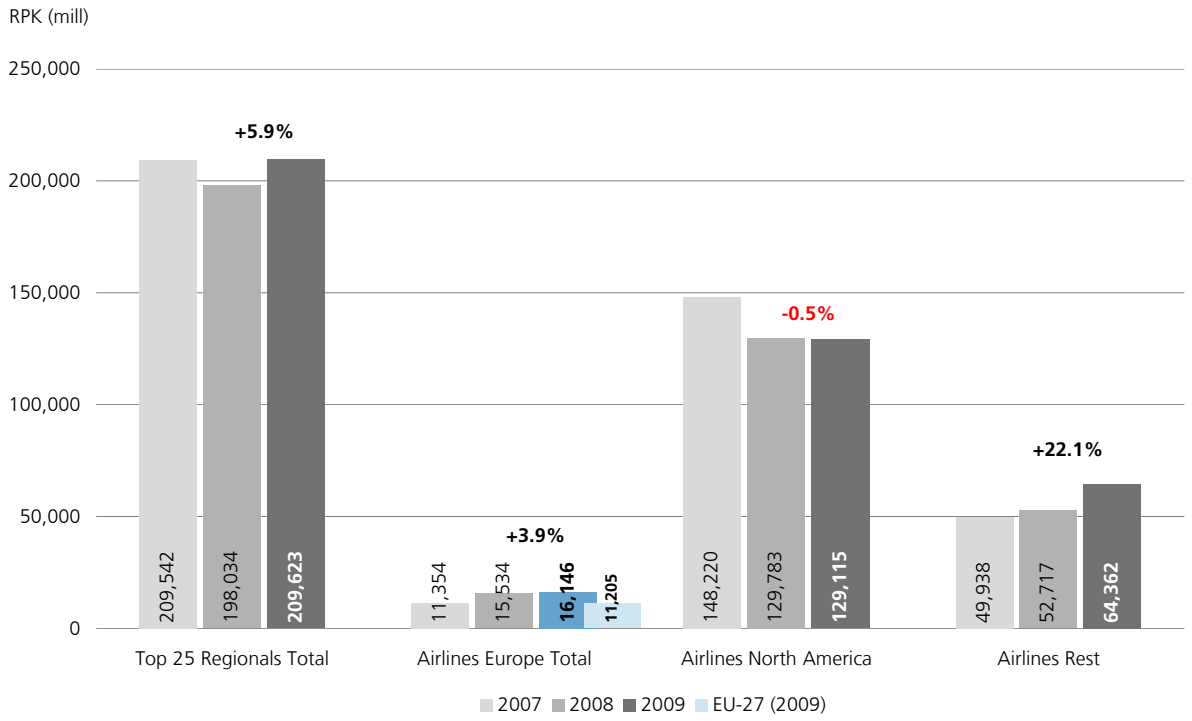
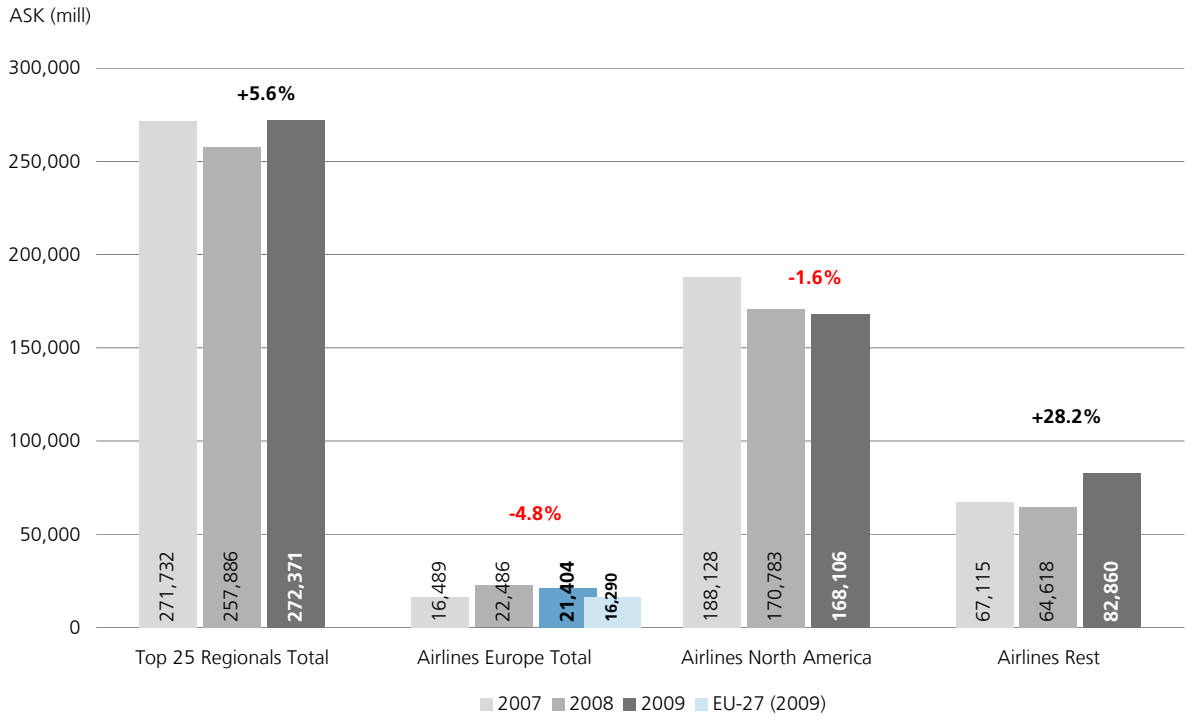


Figure 2-25: ASK for the top 25 regional carriers

Source: Ascend, Airline Business



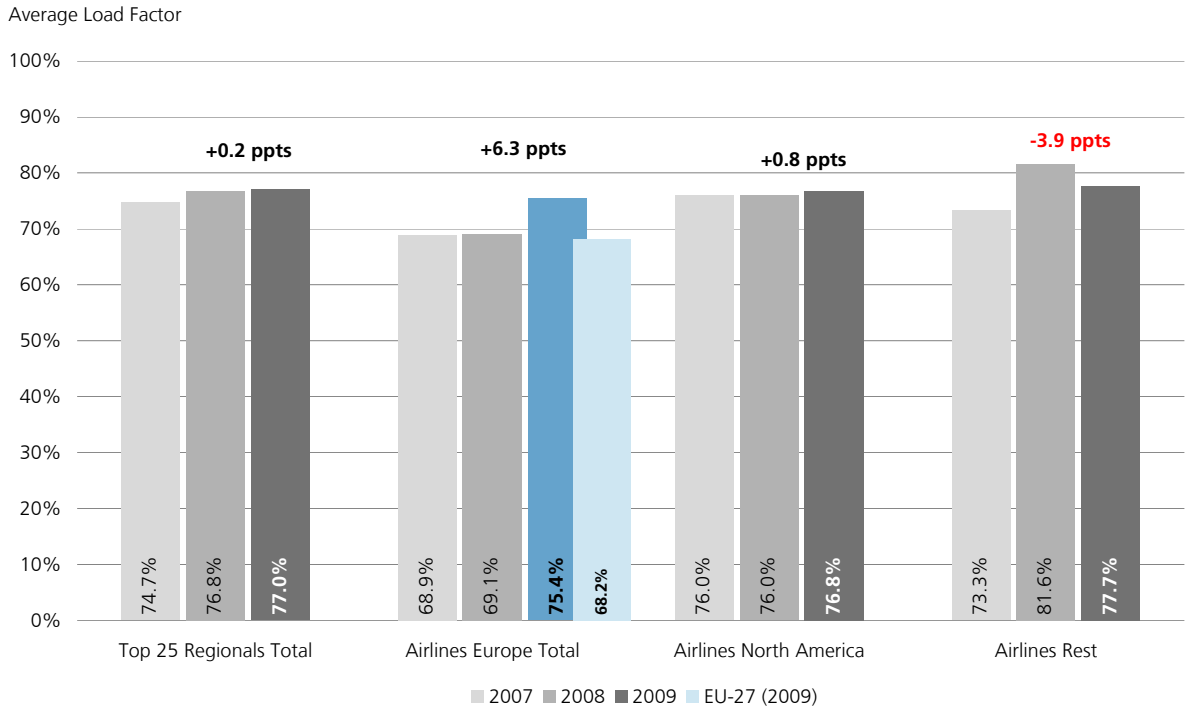
The above analysis of passenger numbers achieved (Figure 2-23) has already demonstrated the dominance of North American airlines in the rankings. Figures 2-24 and 2-25 show the regional

distribution of the total revenue passenger kilometres and available seat kilometres achieved by airlines within this class. In 2009, about 62% of the total operational performance (by the top 25 regional airlines) was attributable to North American airlines.

The load factors of the Regional group demonstrated a slight positive trend for the entire year of 2009 (+0.2 percentage points). Europe showed the highest increase of load factor resulting from the positive growth in RPK of around 4% (Figure 2-24) and a reduction in capacity of 4.8% (Figure 2-25).

Figure 2-26: Average seat load factor for the top 25 regional carriers

Source: Ascend, Airline Business



2.1.4.4 Holiday/charter carriers

The following table lists the top 15 holiday and charter airlines.

Table 2-4: The top 15 charter airlines worldwide

Source: Ascend, Airline Business, IATA

Rank 2009 RPK (class)	Rank 2009 RPK (TTL*)	Rank 2008 RPK	Airline	Region	PAX (mill)	RPK (mill)	ASK (mill)	PLF (%)
1	33	2	Thomson Airways	EU-27	11.2	32,650	36,199	90.2
2	43	1	Thomas Cook Airlines	EU-27	8.2	27,154	29,531	92.0
3	58	3	Condor	EU-27	5.6	19,159	21,908	87.5
4	70	4	Monarch Airlines	EU-27	6.1	15,589	18,661	83.5
5	82	5	Air Transat	North America	3.1	12,415	13,916	89.2
6	113	6	Corsair	EU-27	1.3	9,296	12,017	77.4
7	100	7	SunExpress	Europe	5.6	9,096	11,740	77.5
8	103	-	Thomas Cook Scandinavia* *	EU-27	2.1	8,062	8,687	92.8
9	117	8	Onur Air	Europe	4.1	7,085	8,735	81.1
10	127	11	Pegasus Airlines	Europe	4.8	5,941	7,751	76.7
11	144	12	Iberworld	EU-27	1.3	4,442	5,277	84.2
12	146	-	World Airways	North America	0.9	4,280	6,957	61.5
13	147	14	Livingston Energy Flight	EU-27	1.0	4,178	5,223	80.0
14	152	15	Omni Air International	North America	0.8	3,989	6,797	58.7
15	153	13	flyglobespan	EU-27	1.4	3,950	4,928	80.2

*Position when all airline types are included.

**Figures based on ATI data period Oct 2008 - Sep 2009

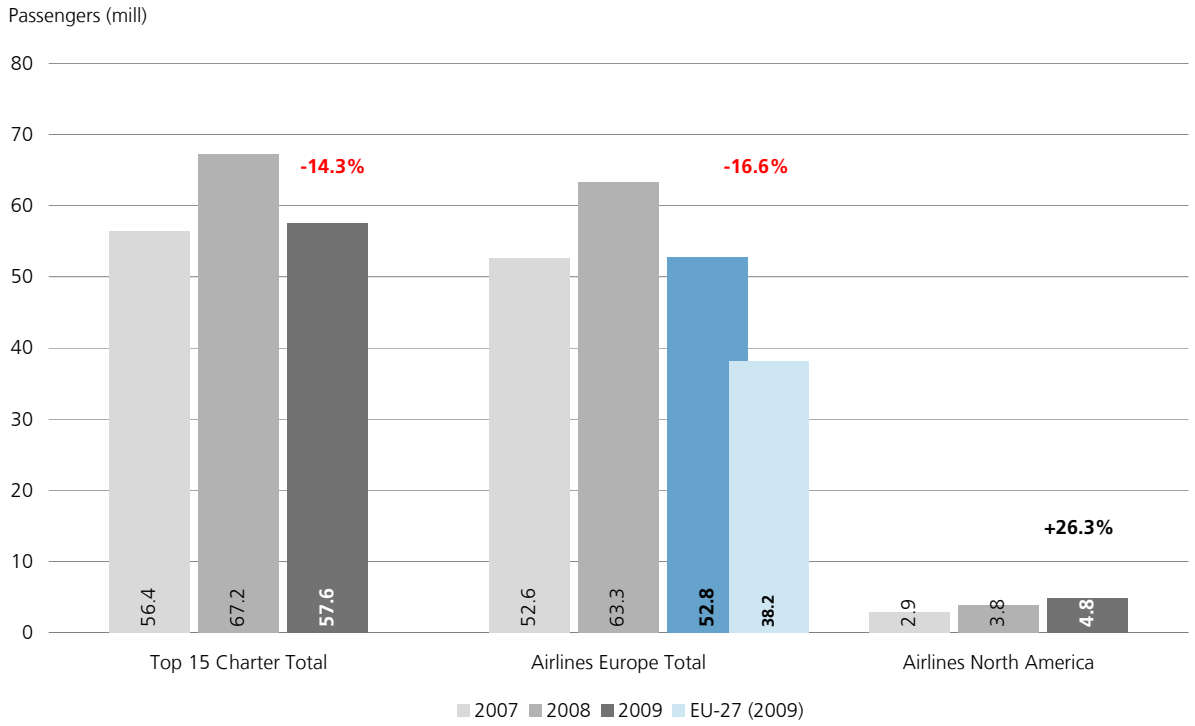
The data obtained for 2009 is mainly related to EU-27 charter airlines. The three North American airlines in the top 15 ranking list play only a minor role compared to the major holiday airlines, Thomson Airways and Thomas Cook Airlines. These two airlines represent the largest share of revenue passenger kilometres and capacity (both combined make up more than 35% of the total in this class). Due to consolidation processes, several European charter airlines no longer appear in this ranking. MyTravel Airways merged with Thomas Cook Airlines in March 2008 while First Choice Airways merged with Thomsonfly and was re-branded as Thomson Airways at the end of 2008. XL Airways UK ceased operations following insolvency.

The overall development shows a sharp decline in all operational performance figures analysed. This trend reflects the tough economic climate for charter and holiday carriers. As mentioned in the LCC chapter, the competition for charter/holiday airlines is intensifying due to LCCs entering this market. The positive growth rates for North American airlines result from a new entrant (World Airways) in this ranking due to the consolidation of the European holiday airlines.

In terms of passenger numbers, a decline of 14.3% is observable. However, it can be pointed out that the passenger numbers emphasise the strong position of European airlines in this top 15 list (91.6% of all passengers carried in this class) thanks to the importance of European charter traffic (mainly flights to tourist destinations around the Mediterranean Sea). Europe has always been more dominant in this sector than other geographical regions.

Figure 2-27: Number of passengers carried by the top 15 holiday/charter carriers

Source: Ascend, Airline Business



Thomson Airways also leads the ranking in terms of passengers carried during the period studied, standing out clearly from its closest competitors, Thomas Cook Airlines and Condor Flugdienst. As the leading airline, Thomson Airways carried more than 11 million passengers (this equals 19.5% of all passengers carried by the top 15 airlines), followed by 8.2 million passengers by Thomas Cook Airlines (14.2%).

Figures 2-28 and 2-29 show the revenue passenger kilometres and the capacity supplied by these airlines in 2009. Both performance figures show a decline of over 15%. The European dominance is again represented by these results.

Figure 2-28: RPK for the top 15 holiday/charter carriers

Source: Ascend, Airline Business

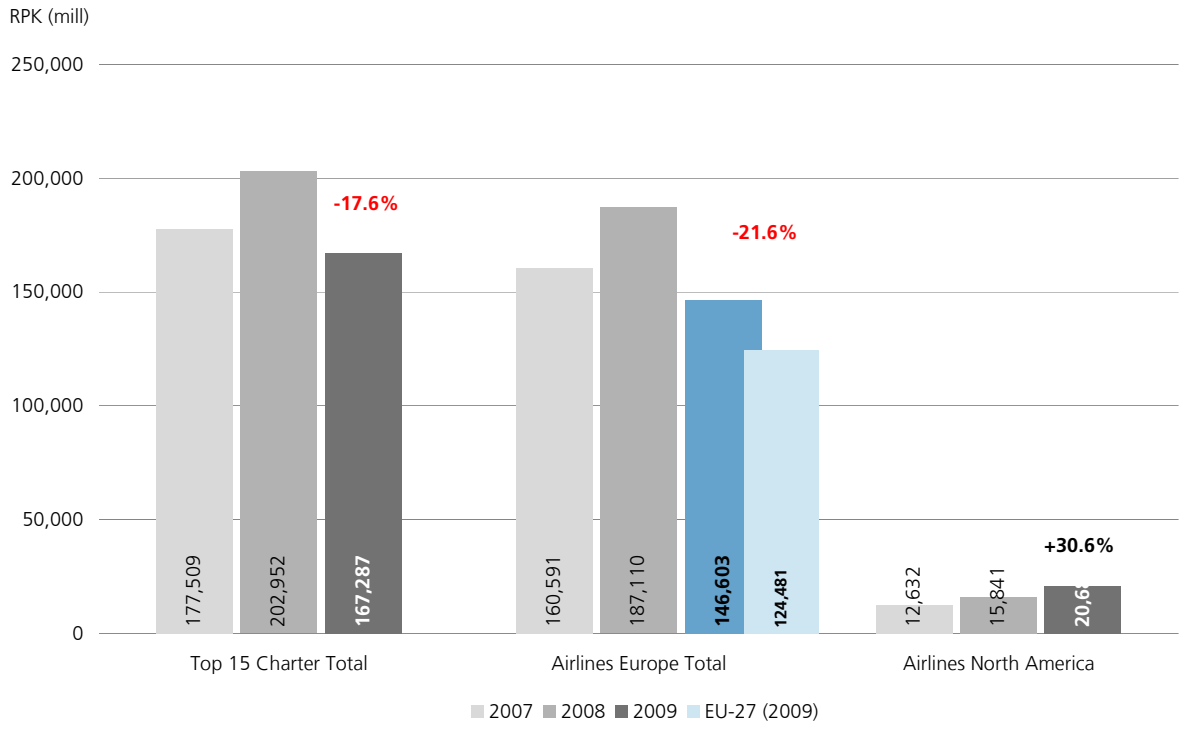
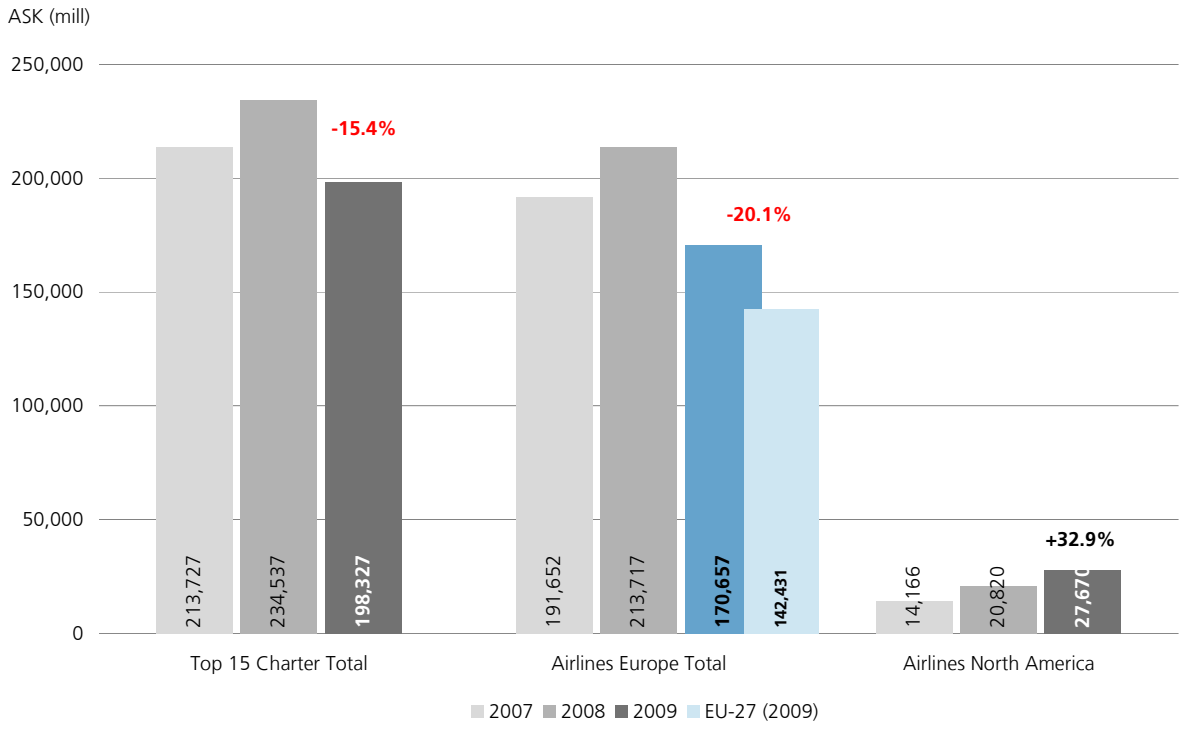


Figure 2-29: ASK for the top 15 holiday/charter carriers

Source: Ascend, Airline Business

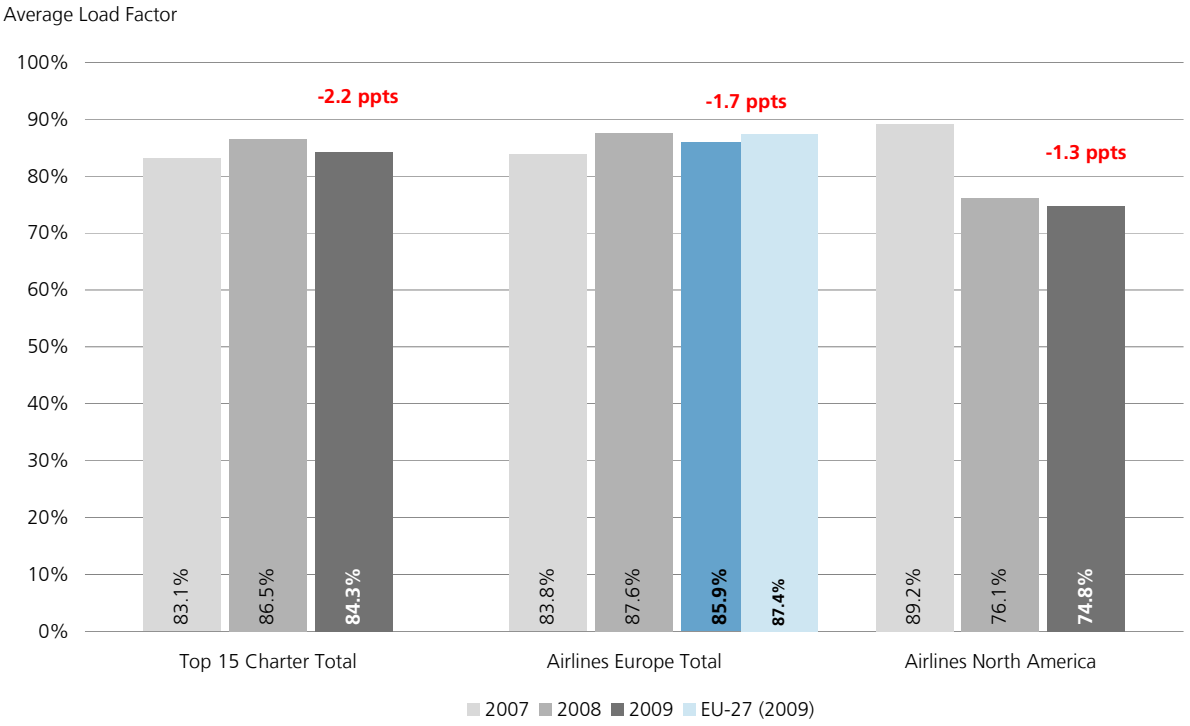


Analysis of the available seat kilometres and the revenue passenger kilometres data reveals the long distances travelled compared to all other classes (except the Middle Eastern FSNCs). On average, each passenger was carried over a distance of approximately 2900 km.

The average seat load factor for all holiday/charter airlines based on the data for available seat kilometres and revenue passenger kilometres shows a relatively high average value of 84.3%. First place in this group is occupied by Thomas Cook Scandinavia with a load factor of 92.8%, followed by Thomas Cook Airlines with 92.0%.

Figure 2-30: Average seat load factor for the top 15 holiday/charter carriers

Source: Ascend, Airline Business



2.1.5 Passenger aircraft fleet

Table 2-5 shows the development of the world passenger aircraft fleet in 2009 compared to 2008. The world fleet is defined here as all passenger aircraft used by commercial operators. Only aircraft that were actually in service at year-end are taken into account. Despite the recession and the declining demand for air travel, the world fleet of passenger aircraft actually increased by 1 % compared to the previous year to 19,830. However, when comparing the different seat classes of aircraft, different trends become apparent.

Aircraft Size	2009	2008	Percentage Change
20-39 seats	1207	1348	-10.5%
40-69 seats	3031	3161	-4.1%
70-119 seats	2739	2565	6.8%
120-169 seats	6817	6948	-1.9%
170-239 seats	3540	3133	13.0%
240-349 seats	1891	1883	0.4%
350+ seats	605	602	0.5%
Total	**19,830**	**19,640**	**1.0%**

Table 2-5: Passenger aircraft in service at year-end 2008/2009

Source: Ascend Online Fleets

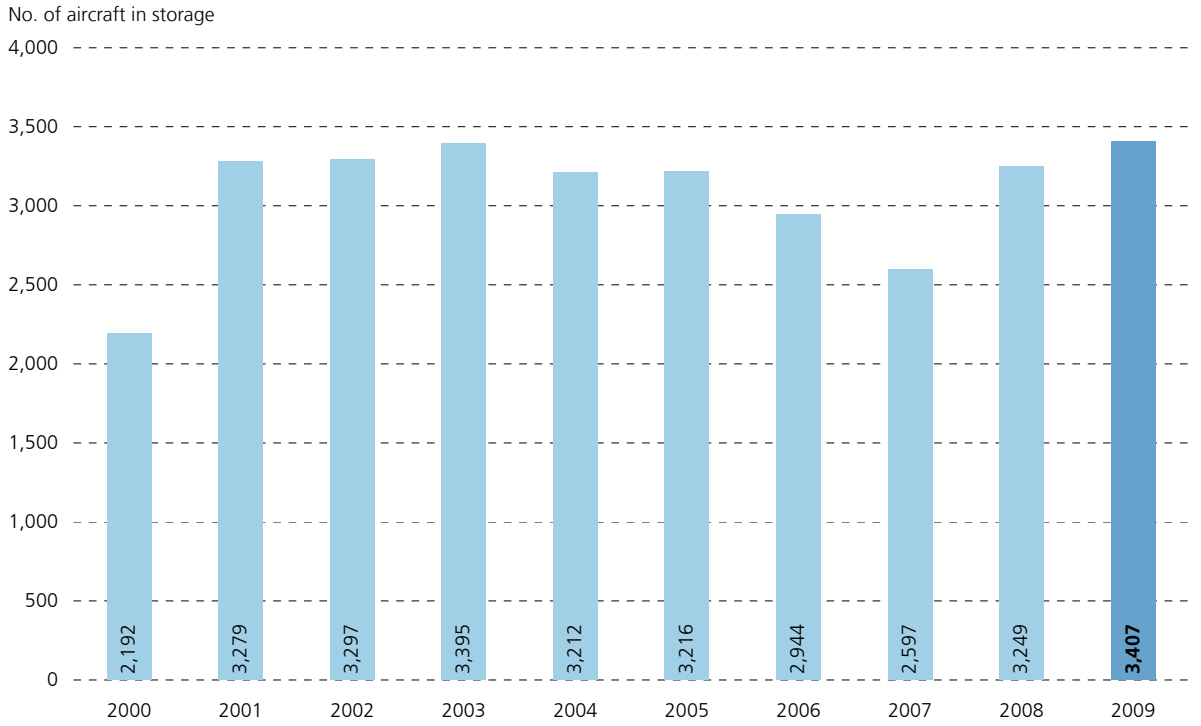
Relatively small aircraft (turboprops and small regional jets) in the class of 20-39 seats were withdrawn from service and this group shrank by almost 150 aircraft (more than 10%). The fleet size in the group of slightly larger aircraft with 40-69 seats was also in decline. This trend might be explained by the fact that the average cost per seat kilometre offered with relatively small aircraft is higher than with larger aircraft, as many fixed costs are spread over a lower number of seats. Simultaneously, due to the economic crisis, yields have declined and airlines may be inclined to reduce frequencies while using larger aircraft for the remaining frequencies. This is supported by the fact that the numbers of large regional jets such as the Bombardier CRJ900 or the Embraer E-Series increased by almost 200 units or 6.8 %.

The biggest increase in a single seat class can be seen among aircraft with 170-239 seats, with 13 % or more than 400 units. Again, the trend for larger aircraft can be explained by the strategy to reduce unit costs. Additionally, precisely this group of aircraft is the mainstay of low-cost carriers, which were still able to grow, despite otherwise declining demand in the overall market for air transport. Apparently, LCCs benefited from the trend that passengers changed from high-fare traditional FSNCs and regional airlines to low-fare alternatives.

With 419 retirements of passenger aircraft in 2009, this indicator reached its lowest value in three years. In 2007, 433 passenger aircraft were permanently withdrawn from service, while this number peaked in 2008 with 586 aircraft being permanently withdrawn from service.

Figure 2-31: Passenger aircraft in storage at year-end 2000-2009

Source: Ascend Online Fleets



The number of aircraft temporarily withdrawn from service remained at a high level with 3,407 aircraft parked at the end of 2009. This is a slight increase from 3,249 a year earlier. The level of passenger aircraft stored is comparable to the years in the aftermath of the 2001 terrorist attacks, SARS and the economic downturn 8-9 years ago.

Figure 2-32 depicts the development of the different fleet segments over the past 10 years. In total, the world passenger aircraft fleet grew by more than 25%. Also over this longer timeframe, the group of aircraft with 170-239 seats showed the highest growth rate, with more than 83%.

Figure 2-32: 10-year development of the world passenger aircraft fleet

Source: Ascend Online Fleets, data as of January 2010

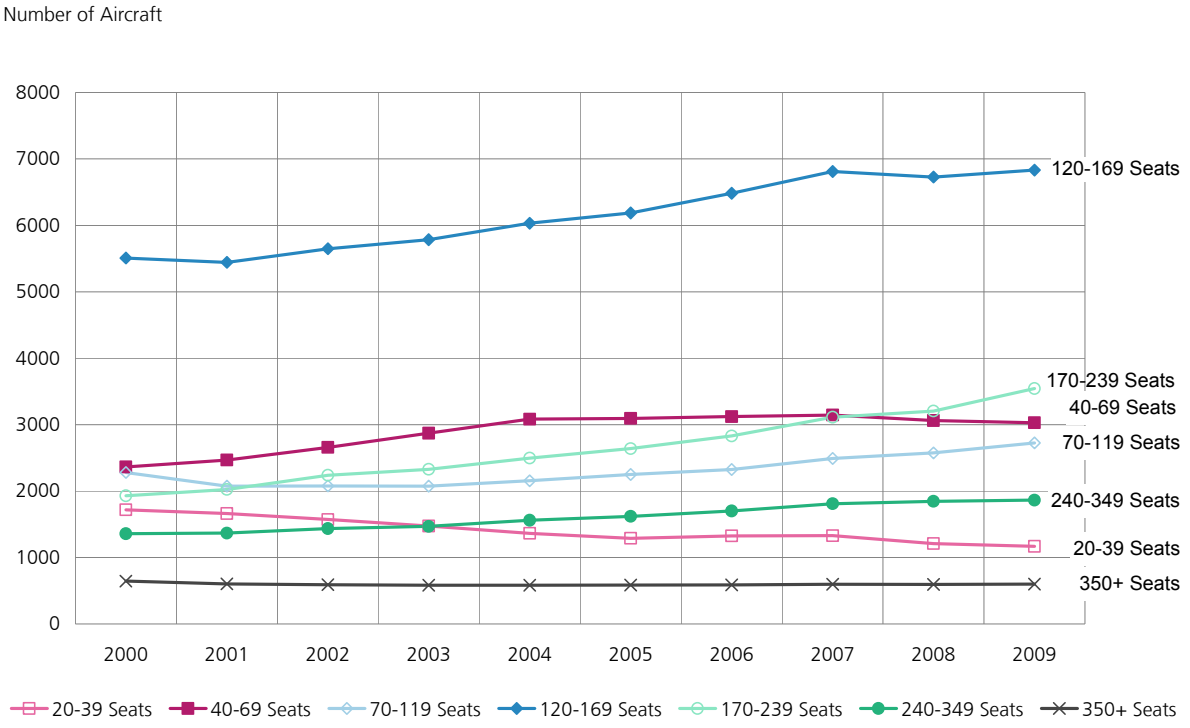


Table 2-6: Average age of passenger aircraft in service at year-end

Source: Ascend Online Fleets, data as of January 2010

Aircraft Category	2009	2008
20-39 seats	20.1	19.5
40-69 seats	13.2	12.9
70-119 seats	10.2	10.9
120-169 seats	10.8	10.9
170-239 seats	8.8	9.2
240-349 seats	9.6	9.4
350+ seats	12.6	12.9
Overall Average Age	**11.2**	**11.4**

The relatively high number of deliveries of new aircraft in combination with the permanent retirement of more than 400 and temporary retirement of about 150 passenger aircraft resulted in an overall decrease in the average age of the world's passenger aircraft fleet from 11.4 years in 2008 to 11.2 years in 2009.

Table 2-7: The 20 largest network carriers by fleet size at year-end 2009, mainline passenger operations only

Source: Ascend Online Fleets, data as of January 2010

Pos.	Operator	Total fleet 2009	Total fleet 2008	Percentage Change	Regional jets and turboprops (20-69 seats)	Small single aisle jets/ turboprops (70-119 seats)	Medium single aisle jets (120-169 seats)	Large single aisle/ small twin aisle jets (170-239 seats)	Intermediate twin aisle jets (240-349 seats)	Large twin aisle jets (350+ seats)
1	Delta Air Lines	**739**	741	**-0.3%**	7	34	377	224	81	16
2	American Airlines	**603**	623	**-3.2%**	0	0	374	182	47	0
3	United Airlines	**360**	353	**2.0%**	0	13	152	104	91	0
4	US Airways	**347**	354	**-2.0%**	0	19	229	85	14	0
5	Continental Airlines	**328**	342	**-4.1%**	0	34	159	109	26	0
6	China Southern Airlines	**302**	249	**21.3%**	6	5	207	58	24	2
7	Lufthansa	**256**	252	**1.6%**	0	30	93	57	53	23
8	Air France	**246**	245	**0.4%**	0	6	98	58	66	18
9	China Eastern Airlines	**244**	228	**7.0%**	15	0	174	15	40	0
10	Air China	**241**	221	**9.0%**	0	0	157	38	42	4
11	British Airways	**222**	233	**-4.7%**	2	33	71	46	53	17
12	Air Canada	**198**	196	**1.0%**	0	60	72	40	26	0
13	Japan Airlines	**196**	193	**1.6%**	0	0	49	25	77	45
14	ANA - All Nippon Airways	**144**	142	**1.4%**	0	5	31	21	57	30
15	SAS	**142**	132	**7.6%**	10	33	67	23	9	0
16	Emirates Airline	**135**	118	**14.4%**	0	0	0	20	45	70
17	TAM Linhas Aereas	**132**	127	**3.9%**	0	0	21	105	2	4
18	Qantas	**128**	132	**-3.0%**	0	0	54	11	38	25
19	Saudi Arabian Airlines	**119**	108	**10.2%**	15	0	38	9	32	25
20	Turkish Airlines (THY)	**117**	113	**3.5%**	0	0	75	21	21	0
	Total fleet operated by 20 largest operators	**4460**	**4361**	**2.3%**	48	238	2121	1027	763	263
	Percentage of world fleet:	**22.5%**	**22.2%**		1.1%	8.7%	31.1%	29.0%	40.3%	43.5%

Table 2-7 provides information on the largest FSNCs by fleet. It takes into account only airline fleets operated by the parent company. Subsidiaries, which are usually founded or contracted to provide feeder services, are not taken into account. Smaller aircraft are therefore underrepresented in this table. Interestingly, the 20 largest network carriers in the world operate about one quarter of the world's passenger aircraft.

The largest mainline FSNC airline in the world by fleet is now Delta Air Lines, which acquired Northwest Airlines and now operates under one Air Operator Certificate. The positions two to five are also held by airlines from the United States. However, if the combined fleets of Air France and KLM, resulting in 354 aircraft, were to be evaluated as one airline, this would make them the fourth largest operator globally.

Interestingly, some of the FSNCs from emerging market economies have shown considerable fleet growth rates. First of all, China Southern has increased fleet size by more than 20% to become the sixth largest aircraft operator in the world with more than 300 aircraft. Emirates had the second highest growth rate and now operates 135 wide-body jets, a growth of 14.4%.

The increasing importance of air transport in the emerging markets is also represented by the fact that among the top 20 FSNCs, only four are located in EU-27 Member States (Lufthansa, Air France, British Airways and SAS), while three are from China (Air China, China Southern and China Eastern), two from the Middle East (Emirates and Saudi Arabian Airlines) and one from South America (TAM).

Particularly the FSNCs from the US have continued to adapt their supply in 2009. This means a reduction in fleet size of -0.3% to -4.1% for Delta, US Airways, American and Continental. Only United Airlines actually increased its fleet by 2%.

The increase in the fleet size at SAS can be explained by its new strategy, "Core SAS", which resulted in the re-integration of business units in order to increase synergies and lower costs.

For the low-cost carriers, business developed quite positively, with the fleet size of the 20 largest airlines in this segment growing by almost 6% in 2009. Southwest Airlines from Texas is still, by a large margin, the largest LCC, with a fleet of 540 aircraft. However, Ryanair has shown tremendous growth, with the Irish carrier taking over 54 new aircraft from Boeing in 2009 and selling 12 on the market, resulting in a fleet growth of more than a quarter. Also featuring double-digit growth rates were airBaltic from Latvia, GOL from Brazil, WestJet from Canada, AirAsia from Malaysia, Lion Air from Indonesia, Australian Jetstar and Norwegian Air Shuttle. Many others, however, acted rather cautiously, either expanding their fleets only marginally (such as easyJet, flybe or Jet2) or even reducing their fleets slightly, such as Air Berlin. 8 of the 20 largest LCCs worldwide are based in a Member State of the EU.

Table 2-8: The 20 largest low-cost airlines by fleet size at year-end 2009

Source: Ascend Online Fleets, data as of January 2010

Pos.	Operator	Total fleet 2009	Total fleet 2008	Percentage Change	Regional jets and turboprops (20-69 seats)	Small single aisle jets (70-119 seats)	Medium single aisle jets (120-169 seats)	Large single aisle/small twin aisle jets (170-239 seats)	Intermediate twin aisle jets (240-349 seats)
1	Southwest Airlines	**540**	536	**0.7%**	0	0	540	0	0
2	Ryanair	**209**	167	**25.1%**	0	0	0	209	0
3	easyJet/easyJet Switzerland	**167**	165	**1.2%**	0	0	160	7	0
4	jetBlue Airways	**151**	142	**6.3%**	0	41	110	0	0
5	AirTran Airways	**138**	135	**2.2%**	0	86	52	0	0
6	airberlin*	**122**	123	**-0.8%**	0	0	35	74	13
7	GOL Linhas Aereas	**94**	85	**10.6%**	0	0	41	53	0
8	WestJet	**86**	76	**13.2%**	0	13	73	0	0
9	AirAsia**	**85**	74	**14.9%**	0	0	15	70	0
10	Virgin Blue Airlines	**70**	64	**9.4%**	0	21	21	28	0
11	Flybe	**68**	67	**1.5%**	0	68	0	0	0
12	Kingfisher Airlines/Kingfisher red	**62**	80	**-22.5%**	19	8	15	20	0
13	Frontier Airlines	**51**	52	**-1.9%**	0	9	38	4	0
14	Jetstar/Jetstar Asia	**51**	43	**18.6%**	0	0	0	44	7
15	Norwegian Air Shuttle	**46**	34	**35.3%**	1	0	27	18	0
16	Lion Air	**44**	33	**33.3%**	0	0	13	31	0
17	Vueling Airlines***	**37**	42	**-11.9%**	0	0	0	37	0
18	airBaltic	**31**	28	**10.7%**	11	0	18	2	0
19	Jet2	**30**	29	**3.4%**	0	0	21	9	0
20	Cebu Pacific Air	**29**	25	**16.0%**	0	8	10	11	0
Total fleet operated by 20 largest operators		**2111**	2000	**5.6%**	31	254	1189	617	20
Percentage of world fleet:		**10.6%**	10.2%		0.7%	9.3%	17.4%	17.4%	1.1%

*) Figures for 2008 and 2009 include the fleet of LTU
**) Figures for 2008 and 2009 include AirAsia, Indonesia AirAsia and Thai AirAsia
***) Figure for 2008 includes Clickair, which merged with Vueling during 2009

Kingfisher is struggling with strong competition on the Indian domestic market and faces ongoing losses. It reduced its fleet by more than 20%. Vueling from Spain has also considerably reduced its fleet after its merger with Clickair and now operates 37 aircraft.

Table 2-9: The 20 largest regional airlines by fleet size at year-end 2009

Source: Ascend Online Fleets, data as of January 2010

Pos.	Operator	Total Fleet 2009	Total Fleet 2008	Percentage Change	Regional jets and turboprops (20-39 seats)	Regional jets and turboprops (40-69 seats)	Small single aisle jets (70-119 seats)
1	SkyWest Airlines	**277**	266	**4.1%**	51	140	86
2	ExpressJet Airlines	**244**	242	**0.8%**	0	244	0
3	American Eagle Airlines	**225**	226	**-0.4%**	24	176	25
4	Atlantic Southeast Airlines	**172**	169	**1.8%**	0	124	48
5	Pinnacle Airlines	**145**	144	**0.7%**	0	129	16
6	Air Canada Jazz	**134**	137	**-2.2%**	36	82	16
7	Mesa Airlines	**117**	115	**1.7%**	16	63	38
8	Comair	**104**	126	**-17.5%**	1	75	28
9	Mesaba Airlines	**98**	102	**-3.9%**	41	16	41
10	Chautauqua Airlines	**87**	111	**-21.6%**	6	81	0
11	Republic Airlines	**84**	69	**21.7%**	0	0	84
12	Air Wisconsin	**70**	69	**1.4%**	0	70	0
13	Lufthansa Cityline	**69**	72	**-4.2%**	0	14	55
14	Regional	**60**	64	**-6.3%**	9	28	23
15	Horizon Air	**58**	53	**9.4%**	0	0	58
16	Shuttle America	**56**	56	**0.0%**	0	0	56
17	Tyrolean Airways	**54**	58	**-6.9%**	0	19	35
18	Air Nostrum	**54**	66	**-18.2%**	0	43	11
19	KLM Cityhopper	**49**	57	**-14.0%**	0	6	43
20	PSA Airlines	**49**	49	**0.0%**	0	35	14
Total fleet operated by 20 largest operators		**2206**	2237	**-1.4%**	184	1345	677
Percentage of world fleet		**11.1%**	**11.4%**		15.2%	44.4%	24.7%

The 20 largest regional airlines have slightly reduced their fleets for the second year in a row. Particularly those airlines operating feeder services for European FSNCs have decided to reduce their fleets considerably, such as Air Nostrum (-18.2%), KLM Cityhopper (-14%), Tyrolean Airways (-6.9%) and Regional (-6.3%).

Holiday carriers are mainly a European phenomenon and it is becoming increasingly difficult to separate the business segments, as shown by TUIfly. Due to the change in business strategy, TUIfly is considered to be a holiday carrier. The airline, which considerably reduced its fleet, has transferred city services to Air Berlin under a wet lease contract for the time being. On those services, aircraft will be branded with the Air Berlin livery. TUIfly is now concentrating on services between Germany and holiday destinations mainly in the Mediterranean region.

Table 2-10: The 10 largest holiday/charter airlines by fleet size at year-end 2009

Source: Ascend Online Fleets, data as of January 2010

Pos.	Operator	Total Fleet 2009	Total Fleet 2008	Percentage Change	Medium single aisle jets (120-169 seats)	Large single aisle/small twin aisle jets (170-239 seats)	Intermediate twin aisle jets (240-349 seats)	Large twin aisle jets (350+ seats)
1	Thomson Airways	**53**	61	**-13.1%**	5	36	12	0
2	Condor Flugdienst	**34**	34	**0.0%**	0	12	22	0
3	TUIfly	**33**	46	**-28.3%**	11	22	0	0
4	Thomas Cook Airlines	**32**	28	**14.3%**	0	24	4	4
5	Monarch Airlines	**28**	27	**3.7%**	0	23	0	5
6	Pegasus Airlines	**24**	13	**84.6%**	8	16	0	0
7	SunExpress	**20**	18	**11.1%**	0	20	0	0
8	Skyservice Airlines	**18**	20	**-10.0%**	0	18	0	0
9	Air Transat	**14**	18	**-22.2%**	0	0	14	0
10	Canjet Airlines	**14**	7	**100.0%**	0	14	0	0
Total fleet operated by 10 largest operators		**270**	272	**-0.7%**	26	130	60	15
Percentage of world fleet:		**1.4%**	**1.4%**		0.4%	3.7%	3.2%	2.5%

2.1.6 Airline financial performance

2.1.6.1 Introduction

Although the worldwide economic crisis had already started in 2008 and the financial crisis even earlier, the full impact of these difficult circumstances really came to the fore in 2009. After almost a decade of relatively stable growth in passenger traffic, which is particularly valid for the low-cost carrier segment, 2009 intensified the consolidation process and brought some notable changes to the air transport market. Overall demand fell mainly with regard to two important business segments in the airline sector. First of all, the demand for holiday travel decreased as many people worldwide decided to save money instead of going on vacation. Secondly, many business travellers became more price-sensitive and avoided business trips or preferred to choose a cheaper solution for travelling. This placed pressure mainly on the established network carriers, while low-cost carriers often profited from this development, being in a position to offer cheaper prices and win clients from the business traveller segment. Nevertheless, the overall financial performance of both airline groups, network carriers and low-cost carriers, was, to some extent, poor in 2009.

The impact of the crisis became concrete with the bankruptcies in the airline sector in 2008/09. Focusing only on Europe, several carriers (e.g. Myair, Sterling Airlines, SkyEurope, Bluewings etc.) were forced to cease their business activities within the last year, mainly due to financial difficulties resulting from falling demand. In addition, fuel hedging contracts (which many airlines concluded in the summer of 2008 when the oil price reached its overall historic peak) placed additional pressure on the already weakened business activities. It is therefore not surprising, that the airlines' financial performance was an particularly significant topic in 2009 and determined the market behaviour of the respective players.

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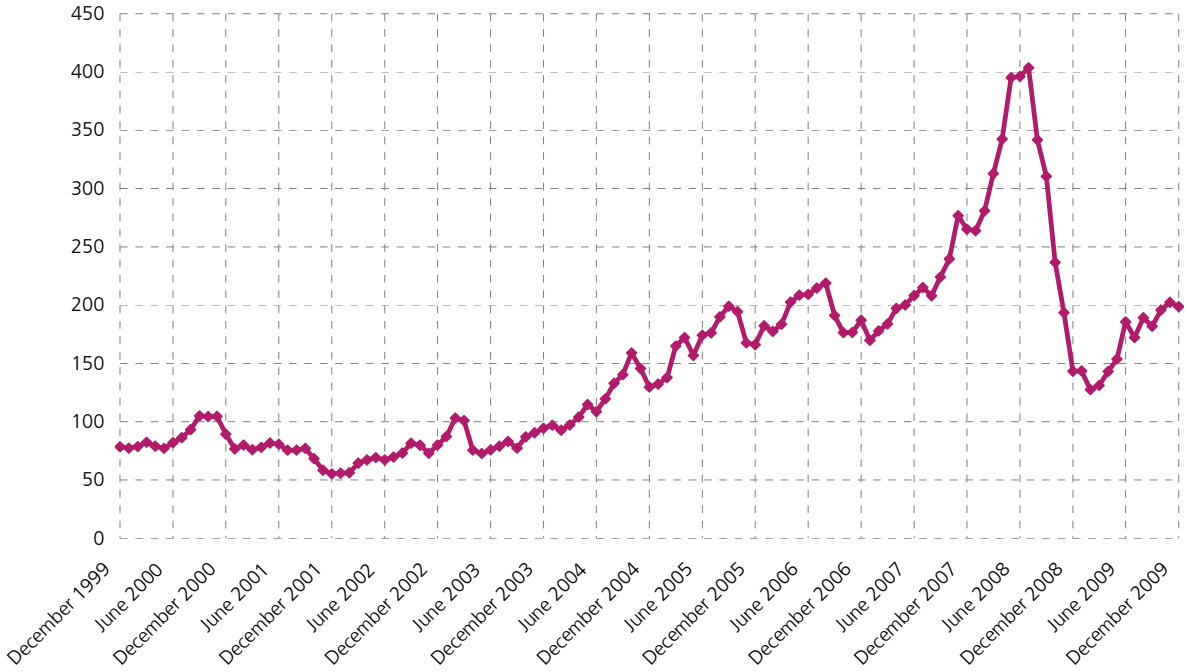
2.1.6.2 Fuel price development

Due to rising fuel prices as a long-term tendency, together with the lack of an available substitute, kerosene has become a rising cost factor for airlines (cf. Figure 2-34). While almost all airlines therefore suffered from the immense rise in oil prices in 2008, the situation eased in 2009. As a result of the economic crisis, demand for oil fell in autumn 2008. Compared to the price peak of $145 per barrel in July 2008, the price for a barrel of oil decreased by more than 50% within one year. Correspondingly, the jet fuel price, which stood at 423 US-cents per gallon in summer 2008, declined to 183 US-cents through to summer 2009. This generally meant an easing of the situation for many airlines which also faced the challenge of falling demand in the last year. Nevertheless, it cannot be ignored that some market players experienced additional difficulties following the conclusion of fuel hedging contracts in summer 2008, in the belief of a continuous rise in oil prices. In view of the fact that the trend turned out to be the opposite of what had been expected, they were additionally burdened in 2009 due to these contracts by having to pay more for jet fuel than the actual free market price.

Looking at the oil market with a long-term focus, the following figure gives a good impression of the development of jet fuel prices throughout the last ten years.

Figure 2-33: Price of jet fuel at Rotterdam in US-cents from 2000 to 2009

Source: US Energy Information Administration

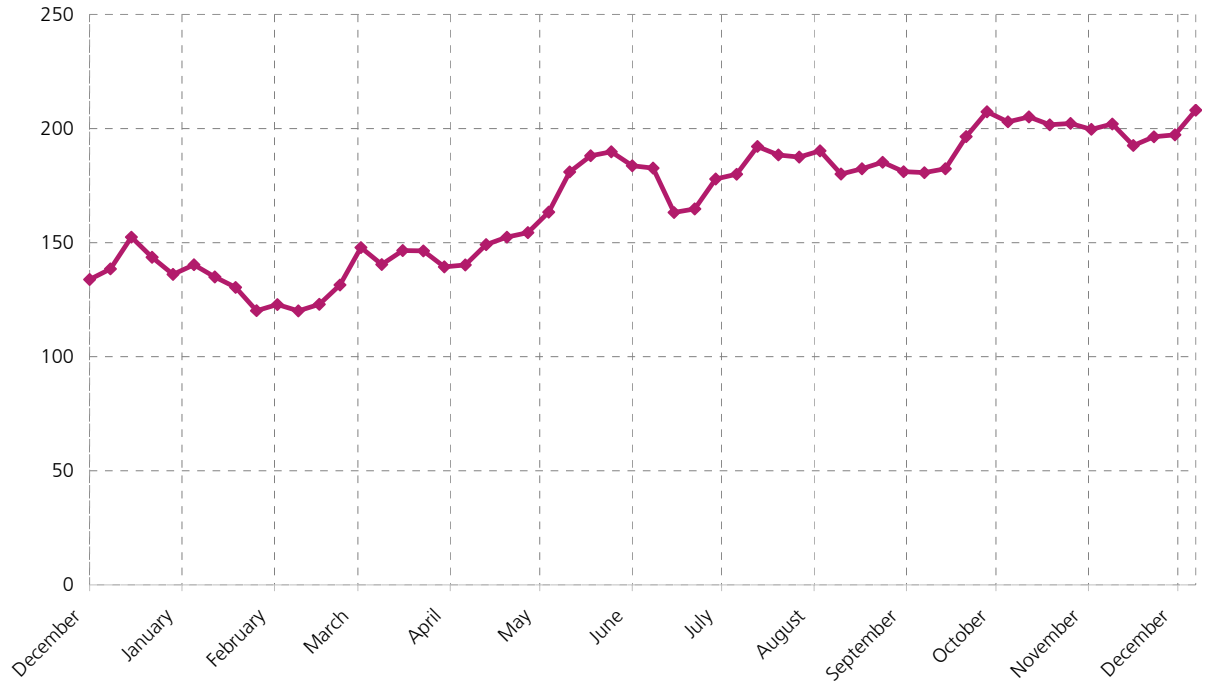


Although the fuel market has now relaxed, it can be seen from the figure that the current price of jet fuel is clearly higher than it was in December 1999. In view of the fact that oil reserves are finite, it is therefore very likely that the jet fuel price will once again rise strongly in the near future.

This thesis is also supported by the following figure which presents the development of the jet fuel price during the year 2009 on a weekly level. While the price for jet fuel stood at 139 US-cents at the beginning of the year, a continuous rise up to 197 US-cents through to December 2009 is visible. This marks an increase of almost 42% within twelve months.

Figure 2-34: Price of jet fuel at Rotterdam in US-cents from January to December 2009

Source: US Energy Information Administration



2.1.6.3 European network carriers' financial results

The following table presents an overview of the financial development of selected European network carriers mainly for the time span of 2009 and 2008.[7] The figures include the non-aviation businesses of the different carriers and were – where necessary – converted into € using the exchange rate at the end of the analysed period.

[7] Virgin Atlantic's business year ends in February. Therefore the figures for all airlines given in this chapter do not exactly cover the same time horizon. Nevertheless, the comparability and consistency is in most cases given.

The table shows a clear trend during the investigated time period. Although each of the chosen airline groups, such as Air France-KLM or British Airways, was still able to achieve a double or single-digit billion revenue in 2009, revenues generally decreased strongly compared to the situation in 2008. Especially Austrian Airlines and the Iberia Group had to report huge declines of between 19% and 20.3%. The only successful players on the market in 2009 were Turkish Airlines and Virgin Atlantic. Within twelve months, the former was able to increase its revenues by more than 14% in spite of the economic crisis while the latter booked an increase of 10.4%.

Table 2-11: Revenues and operating results of selected European network carriers for the years 2008 and 2009

Source: Annual reports of the respective airlines/airline groups; Air Transport World

		Revenues (in mill. €)			Operating Result (in mill. €)	
Pos.	Airline group	2009	2008	%	2009	2008
1	Lufthansa	22,283	24,842	-10.3	271	1,309
2	Air France-KLM	20,992	25,351	-17.2	-1,362	312
3	British Airways	9,105	10,333	-11.9	-445	259
4	SAS Group	4,381	5,157	-15.0	-301	-68
5	Iberia Group	4,231	5,223	-19.0	-475	5
6	THY Turkish Airlines*	3,265	2,842	14.9	336	273
7	Alitalia	2,904	n.a.	n.a.	-272	n.a.
8	Virgin Atlantic	2,554	2,313	10.4	26	9
9	Austrian Airlines	1,963	2,462	-20.3	-294	-312
10	Finnair	1,838	2,256	-18.5	-124	-58
11	Air Lingus	1,206	1,355	-11.0	-81	-20

* included as representative airline of a candidate country for EU membership;
n.a. = non available

Examination of the operating results within the selected time period reveals an even worse picture. With the exception of Lufthansa, Virgin Atlantic and Turkish Airlines, all chosen carriers had to cope with negative operating results in 2009 and no company besides Turkish Airlines and Virgin Atlantic was able to improve its results compared to the previous year. In the case of the Air France-KLM group, the operating loss increased to € 1,362 million and shows the serious impact of the economic crisis. The same is reflected in the development of the operating margins given in the table below. The figures stress the unfavourable relationship between revenues and net results for many European airlines in 2009.

Table 2-12: Operating margins of selected European network carriers

Source: Annual reports of the respective airlines/airline groups; Air Transport World

Pos.	Airline group	Operating margin in % 2009	2008
1	THY Turkish Airlines*	10.3	9.6
2	Lufthansa	1.2	5.3
3	Virgin Atlantic	1.0	0.4
4	British Airways	-4.9	2.5
5	Air France-KLM	-6.5	1.2
6	Air Lingus	-6.7	-1.5
7	Finnair	-6.7	-2.6
8	SAS Group	-6.9	-1.3
9	Alitalia	-9.4	n.a.
10	Iberia Group	-11.2	0.1
11	Austrian Airlines	-15.0	-12.7

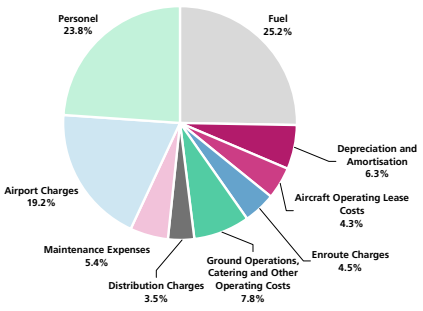
* included as representative airline of a candidate country for EU membership
n.a. = non available

Although falling demand as a result of the economic crisis is obviously one reason for the poor financial performance of many European airlines in 2009, a look at the cost structure of the carriers shows that fuel costs also play an important role with regard to the final results. Looking at the cost structure of Aer Lingus, which is given in the figure below, it becomes visible that fuel purchases generate the largest costs for an airline, despite the fact that the share of fuel in the overall costs decreased by 3.8% from 29% to 25.2% in the analysed period. Nevertheless, given the background of the economic crisis and the resulting challenge of falling demand, these figures give an impression of how vulnerable airlines really are if they come under pressure from the cost and revenue sides at the same time.

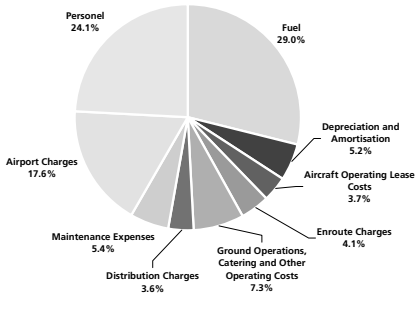
Figure 2-35: Operating expenses of Aer Lingus from January to December 2009 and 2008

Source: Annual report of Aer Lingus

2009



2008



2.1.6.4 European network carriers' share price development

A complete analysis of the financial performance of airlines should always include an investigation of share price developments in order to come to a more detailed conclusion on the market value of the respective carriers. This is of particular importance, as the share price directly reflects the state of the global economy and is a good indicator of current developments, especially in times of crisis.

The following chart gives an overview of the share prices of five of the biggest European network carriers and can therefore be regarded as representative in showing the situation of airlines on European financial markets in the year 2009. To facilitate comparisons, all values, which are given in the home currency of the selected airlines, were indexed by standardizing the share price to 100 on 2nd January 2009. The share prices used herein are adjusted for splits and dividends in order to correctly depict the overall performance on the stock market.

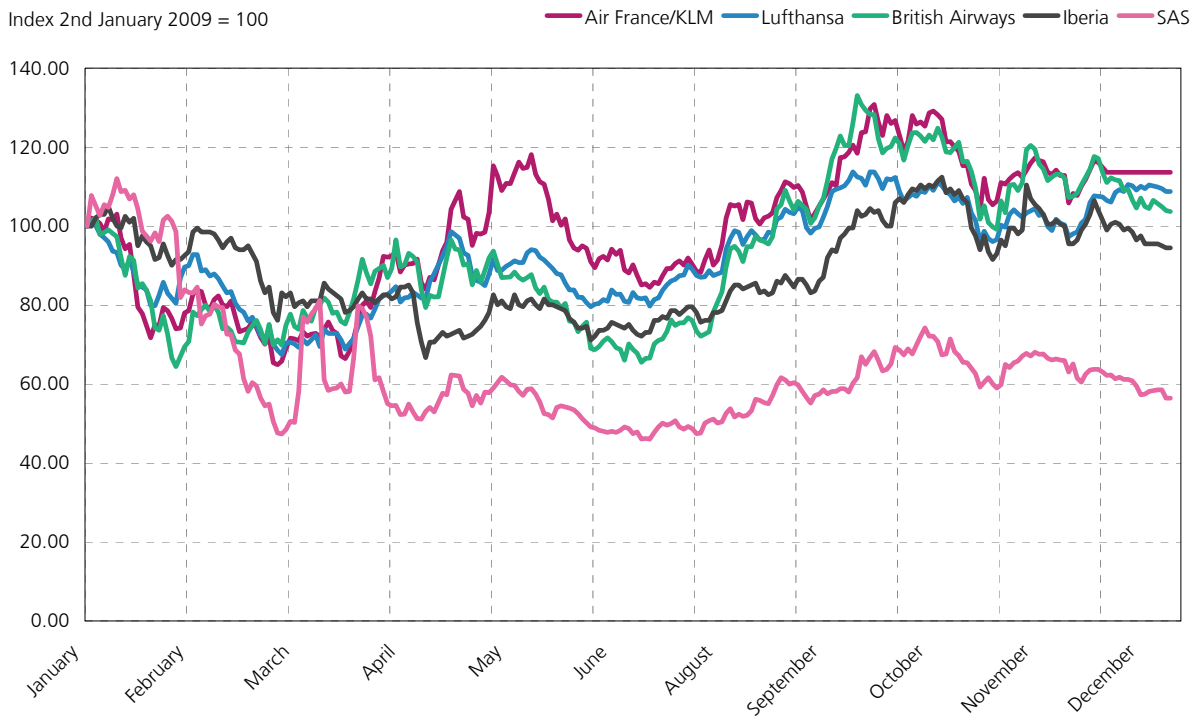
Taking a look at the chart, the first impression is that there was obviously a lot of movement in the share market in 2009. Some players were successful and closed the year 2009 with a better result than at the beginning, while others predominantly lost value and had to cope with a 50% decrease from their starting share price at the end of year. This leads on average to an overall performance of -4.6% when regarding the performance of all airlines together, which is, in fact, not as dramatic as in 2008. In that year, all selected airlines together lost about 43% of their value within twelve months.

One reason for this change for the better between 2008 and 2009 can be seen in the fact that 2009 brought some recovery to the financial markets, as the crisis had already reached the real economy and everyone was more involved in strategic decision-making based on the real situation. In 2008 this was different, as the crisis had so far only reached the financial markets and nobody was sure of its future impact. This led to considerable mistrust in investment decisions within a short time period and caused a general downward trend among almost all global stocks as demand for shares fell dramatically. These overly hasty reactions were no longer a factor in 2009.

This is also reflected in the share prices of the selected carriers in the chart below. Best performer among the selected FSNCs in 2009 was Air France with a return of 13.7%, followed by Lufthansa with about 9% and British Airways with 3.7%. The share price trends at Iberia and the SAS Group were less successful. While the former had to cope with a share value decrease of about 5.5%, shares in the SAS Group lost almost half their initial value in the same time span.

Figure 2-36: Share price development of major European network carriers in 2009

Source: Historical stock quotes on www.yahoo.com and http://www.nasdaqomxnordic.com/, adjusted for splits and dividends



2.1.6.5 European Low-Cost Carriers' financial results

Although the low-cost air travel business has been very successful since its entry into the market, the economic crisis brought pressure to this business segment due to reduced passenger demand within the last year. This situation is indicated in the table below, which gives an overview of the financial development of selected European low-cost carriers with regard to their fiscal years.

Table 2-13: Revenues and operating results of selected European Low-Cost Carriers for the years 2009 and 2008

Source: Quarterly and annual reports of the respective airlines/airline groups

Pos.	Airline	Revenues (in mill. €) 2009	2008	%	Operating Result (in mill. €) 2009	2008	Fiscal year ending
1	Air Berlin	3,240	3,389	-4.3	28	2	31.12.2009
2	easyJet	3,003	2,661	12.9	68	102	30.09.2009
3	Ryanair	2,988	2,942	1.6	402	93	31.03.2010
4	Norwegian Air Shuttle	881	750	17.5	69	-41	31.12.2009
5	Vueling Airlines	602	441	36.5	71	-31	31.12.2009

The most successful player in terms of absolute revenues in the analysed time period is Air Berlin. The company achieved revenues of € 3,240 billion in 2009. Nevertheless, in comparison to 2008, the carrier had to report a revenue decline of 4.3%. In contrast, Ryanair could report a revenue growth of 1.6%. Given former performance figures of the company, this is nonetheless only a moderate growth, which is a relatively new phenomenon in the low-cost business - normally only characterised by continuing high revenue growth rates - and this expresses the impact of the reduced demand.

Focusing on the development of the operating result of the selected airlines, the overall picture becomes a little more optimistic and particularly shows a huge difference compared to the situation of the network carriers. All low-cost airlines ended their financial year with an operating profit, led by Ryanair with a result of € 402 million, followed by Vueling Airlines with € 71 million. The result for the latter shows an enormous improvement as Vueling Airlines – as well as Norwegian Air Shuttle – had reported a negative operating result in 2008.

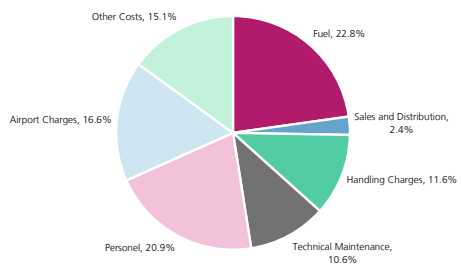
One reason for this upward trend can probably be seen in an effective cost management. This thesis is supported by the fact that low-cost carriers are generally very cost-sensitive due to their business model and are able to react quickly to changing markets in comparison to network carriers.

Looking at the cost structure of Norwegian Air Shuttle in the figure below, this theory is especially supported by the share of fuel costs in the overall costs. While this share was about 33.6% of all costs in 2008, the company was successful in reducing this figure down to 22.8% one year later. This results in an additional advantage for Norwegian Air Shuttle, as fuel costs normally strongly influence the financial performance of an airline and changes on the oil market can therefore reach the companies in a very short time.

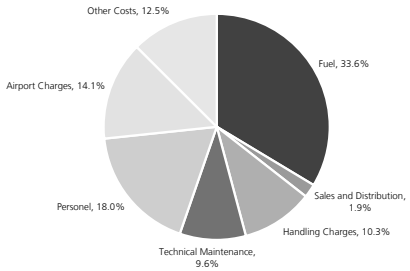
Figure 2-37: Norwegian Air Shuttle's operating expenses structure from January to December 2009 and 2008

Source: Annual report of Norwegian Air Shuttle

2009



2008



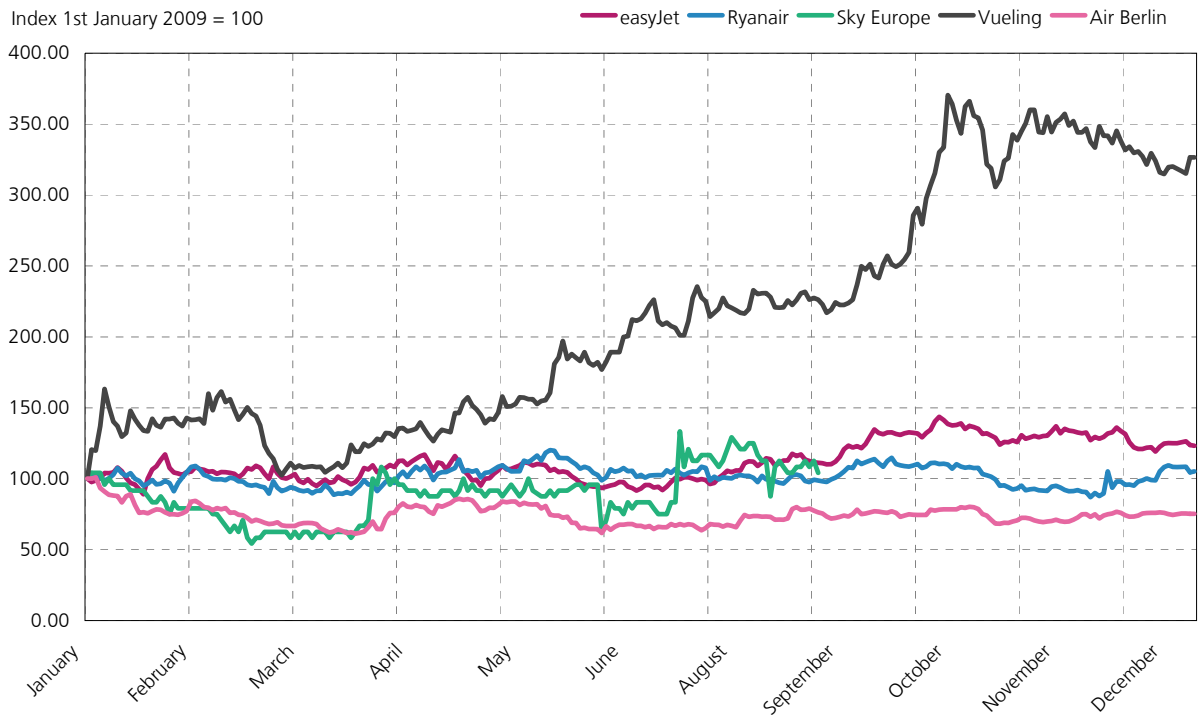
Nevertheless, the cost structure of Norwegian Air Shuttle is not perfectly balanced. While sales and distribution costs increased only marginally by 0.5% between 2008 and 2009, the company reported a higher share of costs in personnel expenses, which increased from 18% to 20.9%, and costs for technical maintenance, which rose from 9.6% to 10.6%. Additionally, the share of costs for airport charges grew from 14.1% to 16.6%. Although all this contributed to an absolute increase of costs from 5,969 billion NOK to 6,242 billion NOK between 2008 and 2009, Norwegian Air Shuttle was still able to report an increased operating result by profiting from achieved revenue increases in the same time period.

2.1.6.6 European Low-Cost Carriers' share price development

The following figure presents an overview of the share price development of selected European low-cost carriers.

Figure 2-38: Share price development of major European low-cost carriers in 2009

Source: Historical stock quotes on www.yahoo.com, adjusted for splits and dividends



While the overall performance of the network carriers on the financial market suffered in 2009 by losing 4.6% of their initial value, the result for the selected low-cost carriers offers many more grounds for optimism. The value of their share prices increased on average by almost 26% within twelve months and indicates an impressive trend in contrast to 2008 when the same figure stood at -66.5%.

Nevertheless, the detailed picture for 2009 is highly differentiated and not consistently positive. One of the carriers displayed above, SkyEurope, even had to declare bankruptcy at the

beginning of September 2009. For this reason, the above chart only includes SkyEurope's shares up to 31st August 2009, after which trading stopped. Air Berlin performed less well than the average. While the average share price grew as mentioned by 26% within one year, Air Berlin shares lost about 25% of their initial value in the same time span. The general good performance in the chart above is therefore mainly due to the immense price increase of Vueling shares. In this airline's case, an investment of € 100 on 2nd January 2009 had a value of € 326 twelve months later. Finally, value increases can also be stated for the shares of Ryanair (+5.1%) and easyJet (+23.2%).

2.1.7 Alliances

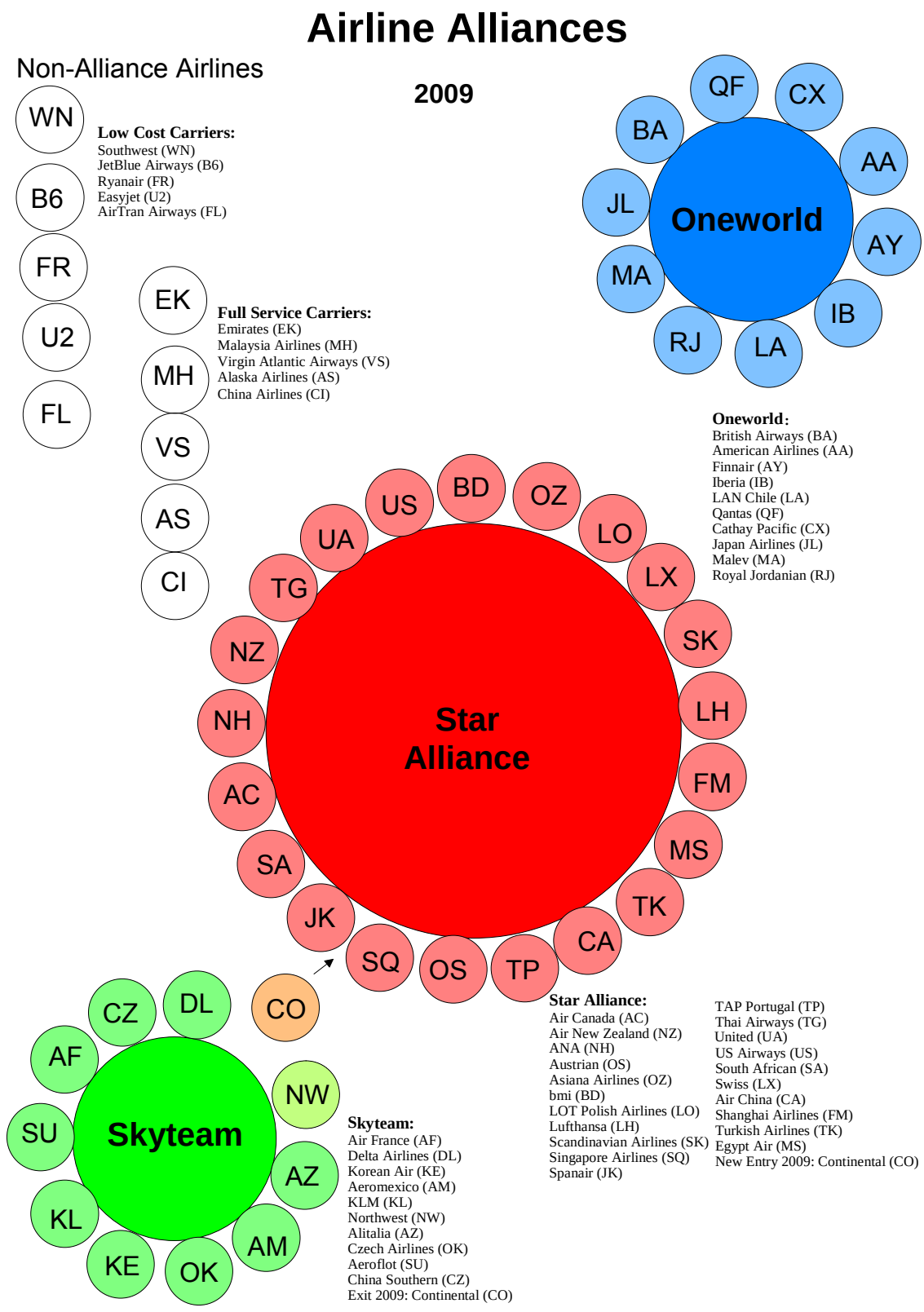
Airline alliances comprise a multitude of marketing instruments, such as code sharing, blocked space agreements or joint frequent flyer programmes through to deep integration of different airlines along the value chain in strategic alliances. In many cases, airlines committed to strategic alliances also conclude code-sharing agreements with partners who are not members of their own alliance.

The foundations of two airline alliances were first laid in 1987: Northwest and KLM formed a cooperation which resulted, in 1998, in the Wings alliance with Continental, Air France and Alitalia, while Delta Airlines, Singapore Airlines and Swissair founded Global Excellence. The beginning of the Star Alliance goes back to 1993, when Lufthansa and Varig formed a bilateral cooperation. Star Alliance was then finally founded in 1997 by Lufthansa, United Airlines, Scandinavian Airlines, Air Canada and Thai. First signs of oneworld go back to 1996, with British Airways and American Airlines cooperating on flights between Europe and the USA. Together with Cathay Pacific, Qantas and Canadian Airlines, the oneworld alliance was formed in 1998. The now defunct Qualiflyer and Atlantic Excellence alliances were founded in 1998 by several airlines. SkyTeam was formed in 2000 by Air France, Delta Air Lines, Aeromexico and Korean.

In 1995, there were around 300 airline cooperation agreements worldwide. Their number increased steadily to 502 in 1998. In 2000, their number finally reached 580, from which the global strategic airline alliances emerged. Since then, the Wings, Qualiflyer, Atlantic Excellence and Global Excellence alliances have been dissolved. Today, only three global airline alliances remain: Star Alliance, oneworld and SkyTeam. In many cases, members of the dissolved alliances joined one of the remaining three. Figure 2-15 displays the relationships between major airlines and the global strategic airline alliances.

Figure 2-39: Airline alliances 2009

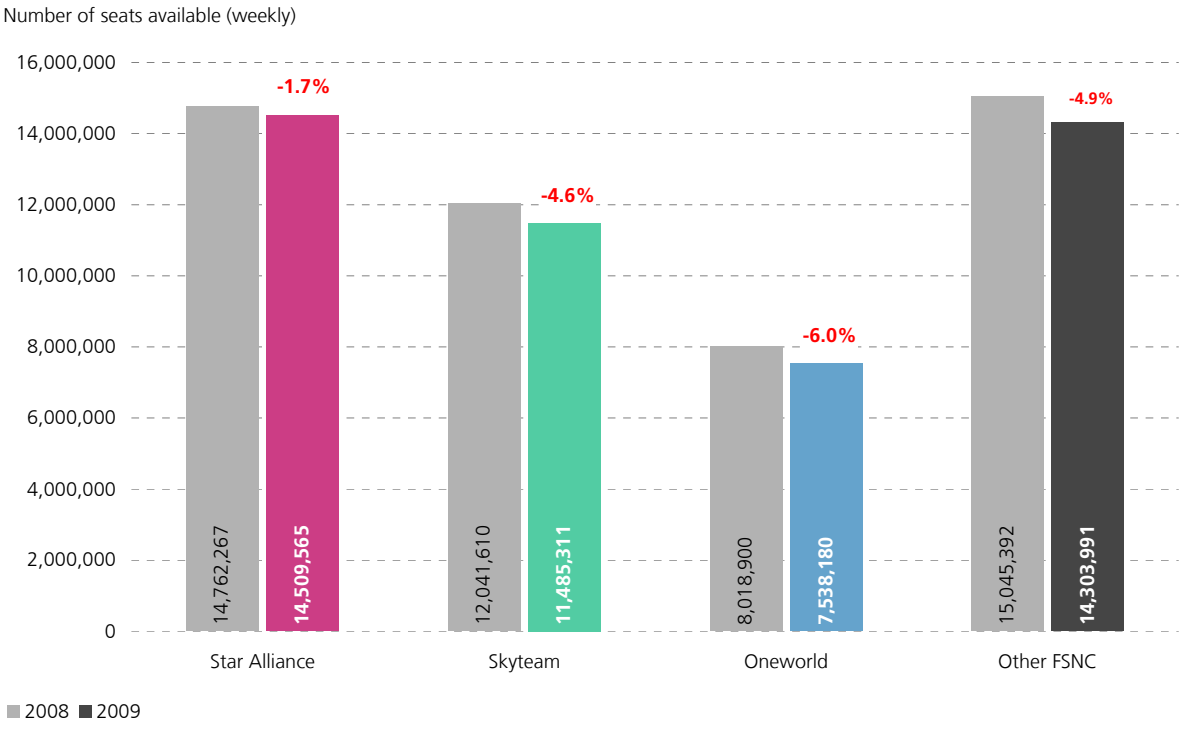
Source: OAG 2009, DLR



The figure only includes full members, whereas regional partners and associated members are not considered in the analysis to follow. Among the three alliances, Star Alliance is the biggest in terms of the number of members. It was formed by 21 airlines in 2007. Varig left the Star Alliance in 2007, whereas Air China and Shanghai Airlines entered Star Alliance in 2007. In 2008, Turkish Airlines and Egypt Air joined Star Alliance. SkyTeam consists of 11 members, with China Southern joining the alliance in 2007. The oneworld alliance comprised ten airlines in 2007. Japan Airlines, Malev and Royal Jordanian joined oneworld in 2007, while Aer Lingus left the alliance. Aer Lingus now operates in the low-cost segment. Continental Airlines switched from Skyteam to Star Alliance in 2009 and Northwest Airlines merged with Delta Airlines in 2009. However, there are a number of airlines which do not belong to any alliance; these are essentially low-cost carriers such as easyJet or Air Berlin and big FSNCs, with Emirates being the most prominent full service carrier not belonging to any airline alliance. Recently, a number of airlines from Asia (especially from China) have joined one of the three airline alliances.

Figure 2-40: Weekly seats available by Alliance

Source: OAG 2009



The figure above illustrates the number of seats offered worldwide by airline alliance for the years 2008 and 2009. Star Alliance accounts for 31% of these, followed by Skyteam with 25%. Oneworld owns a share of 16%. FSNCs not belonging to any airline alliance account for about 29% of all take-offs worldwide. This group consists of FSNCs with a high share of domestic air transport. The "non-alliance FSNCs" group is composed of several airlines with a high number of take-offs, such as Olympic airlines, and many airlines with a small number of take-offs. Compared with 2008, all major airline alliances lowered their number of seats offered within a

range of between 3% and 6%. However, FSNCs not belonging to an alliance increased their number of seats offered by almost 2%.

Figure 2-41 shows the weekly seat capacity offered worldwide by airlines belonging to the Star Alliance for the years 2008 and 2009. United Airlines had the highest number of seats available in 2008, which amount to more than 2.3 million seats per week, followed by US Airways with about 2.1 million seats per week and Lufthansa, with nearly 1.6 million seats per week, being the first European carrier in this ranking. Changes compared to 2008 vary widely and lie within a range of about +/- 24%.

Figure 2-41: Number of weekly seats available worldwide of Star Alliance airlines in 2008 and 2009

Source: OAG 2009

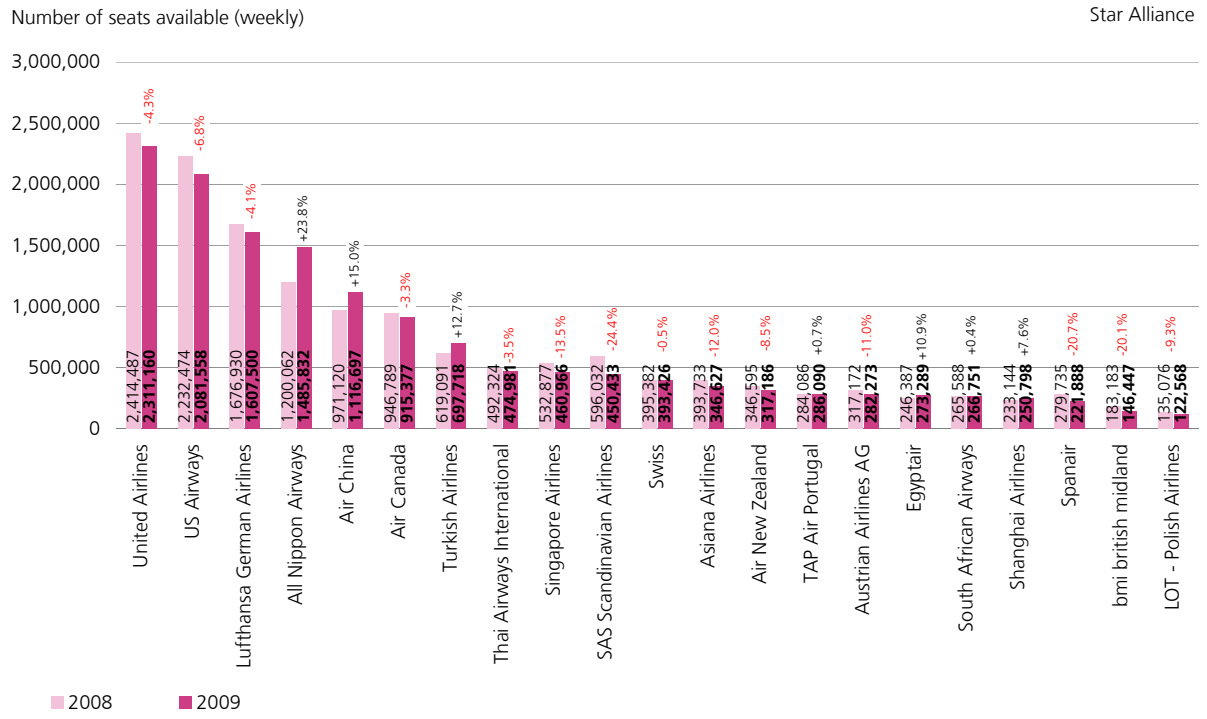
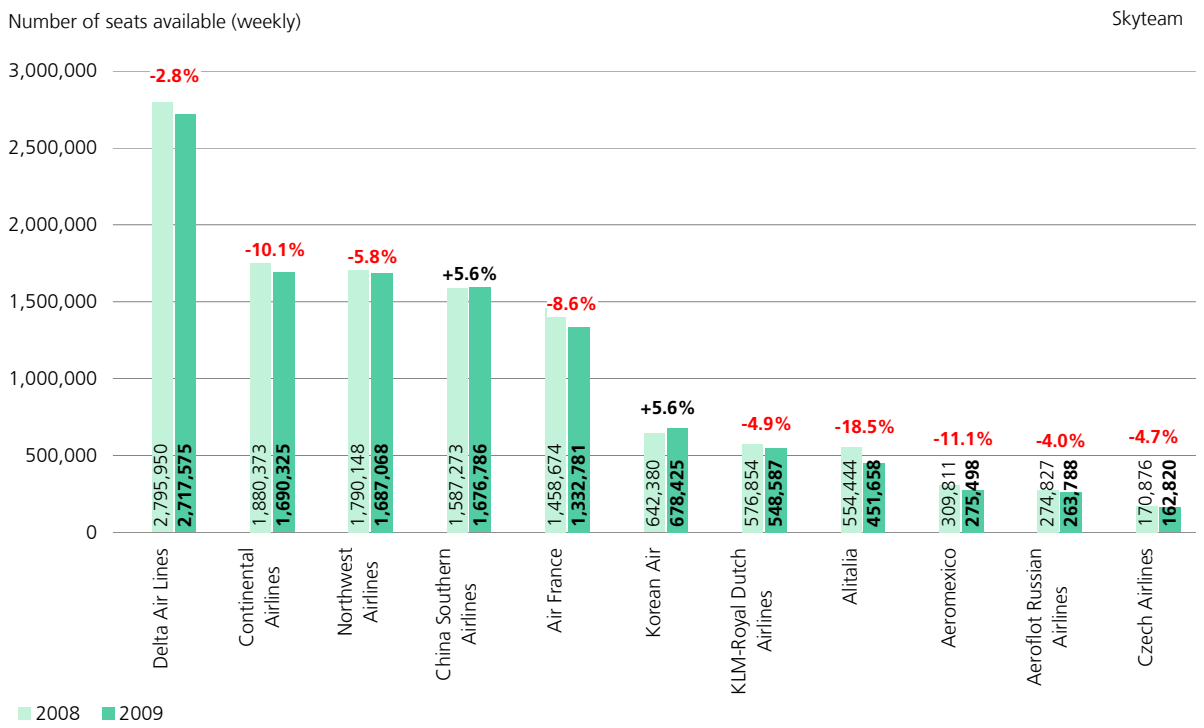


Figure 2-42: Number of weekly seats available worldwide of SkyTeam alliance airlines in 2008 and 2009

Source: OAG 2009



Delta Airlines is the leading member of the SkyTeam alliance in terms of seats available in 2008 and 2009, as illustrated by Figure 2-42. Delta Airlines offered around 2.7 million seats per week in 2008, followed by Continental Airlines and Northwest Airlines, each offering 1.7 million seats per week. The first European carrier in the SkyTeam alliance is Air France in fifth place, with 1.3 million seats offered per week in 2009. Changes compared to 2008 lie within a range of about 6% and -18%. The two largest outliers are Alitalia and Northwest Airlines, with -18% and +6% seats offered per week respectively.

Figure 2-43: Number of weekly seats available worldwide of oneworld alliance airlines in 2008 and 2009

Source: OAG 2008

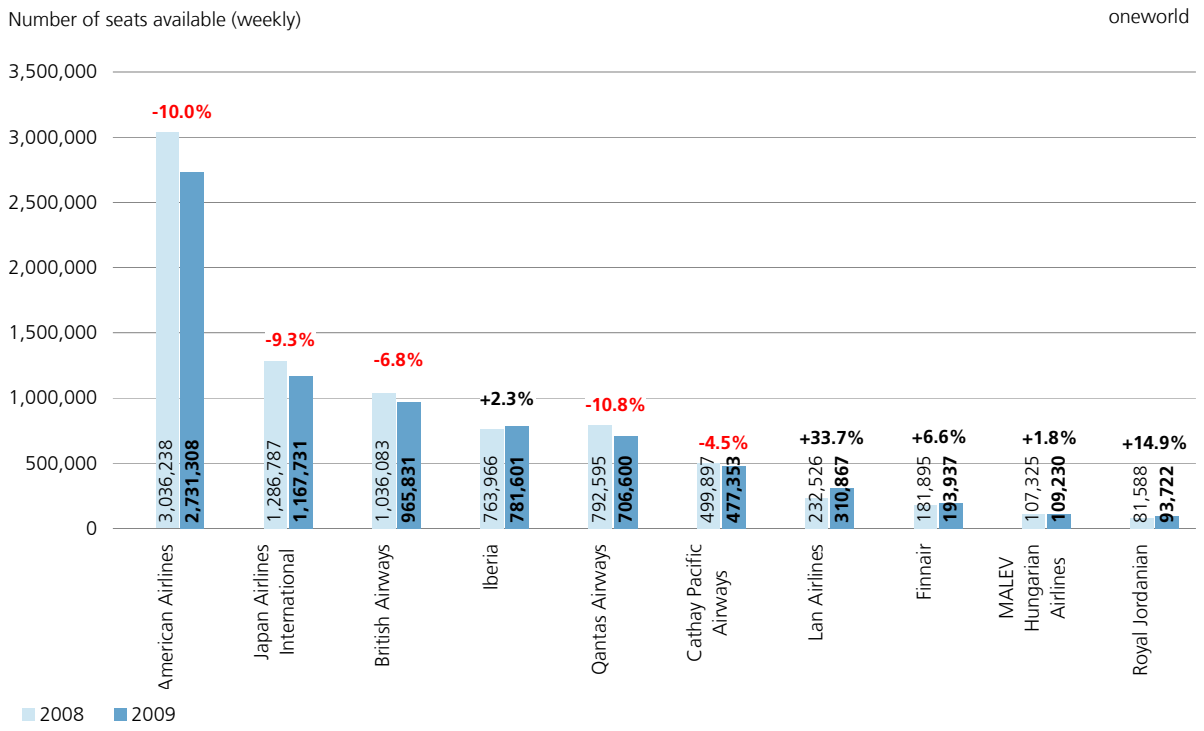


Figure 2-43 shows the number of seats available in 2008 and 2009 for the members of oneworld. The major airline in terms of seat capacity is American Airlines, with 2.7 million seats offered per week in 2009. The first European carrier in this ranking is British Airways, with around 1 million seats offered per week in 2009. Changes compared to 2008 lie within a range of about -11% and 34%. The two largest outliers are Qantas Airways and Lan Airlines, with -11% and 34% seats offered per week respectively.

Figure 2-44: Number of weekly seats available worldwide of non-alliance FSNCs in 2008 and 2009

Source: OAG 2008

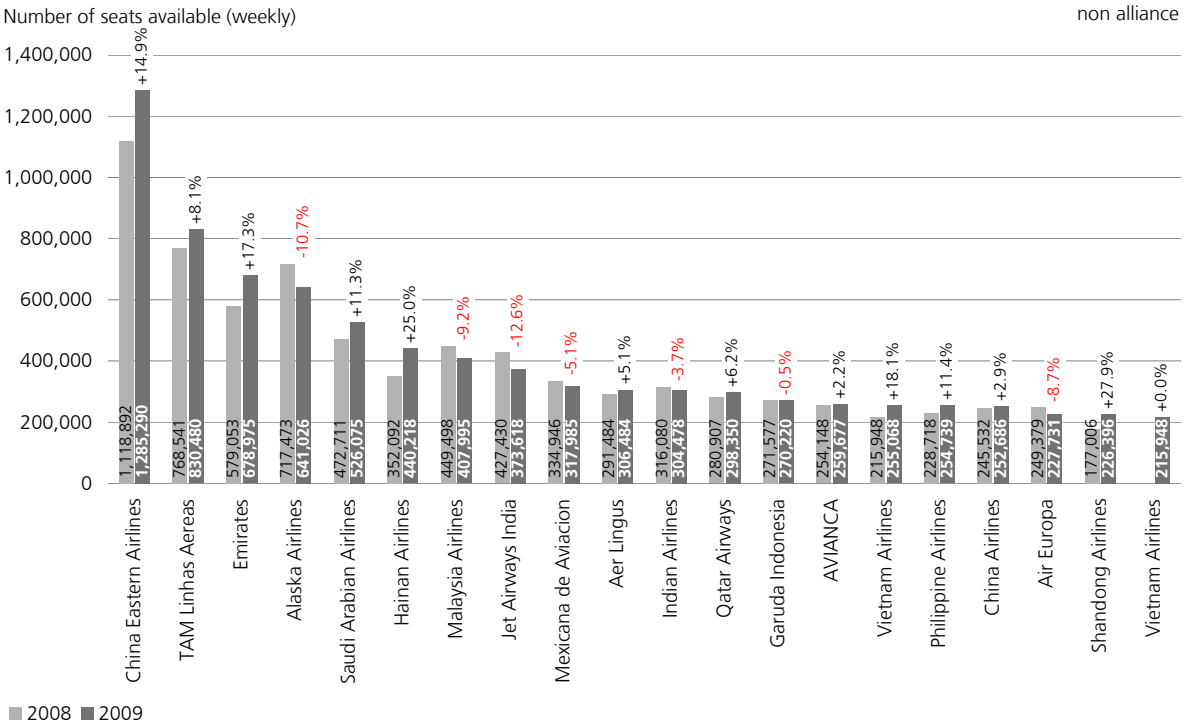


Figure 2-44 shows the number of seats available per week in 2008 and 2009 for the 20 largest non-alliance full-service network carriers, of which China Eastern Airlines is the biggest with 1.3 million seats offered in 2009. The first European non-alliance FSNC is Aer Lingus in place 10, with about 300,000 seats offered per week in 2009. Changes compared to 2008 lie within a range of about -13% and +28%.

Figures 2-45 and 2-46 illustrate the shares of the four carrier categories described earlier in this study at major hub and international airports in Europe. Full-service network carriers are differentiated as to whether they belong to one of the four airline alliances (and which of these) or not. Typical hub airports such as Frankfurt, Amsterdam, Paris Charles de Gaulle, London Heathrow, Madrid and Vienna are mainly dominated by FSNCs which belong to one of the airline alliances. The major alliance at such an airport typically accounts for between 50% and 75% of the seat capacity offered, as illustrated by Figure 2-46.

However, London Heathrow is an exception to the rule, as both Star Alliance and oneworld have a considerable market share. Furthermore, nearly 200,000 weekly seats are from full-service network carriers not belonging to any airline alliance. Nevertheless, oneworld carriers have the highest share of departures at London Heathrow, accounting for 47% of the total number of seats available. Madrid is similar to London Heathrow, with oneworld being the major alliance at the airport, but both Star Alliance and non-alliance full-service network carriers are together responsible for nearly 200,000 seats per week. London Gatwick has both a high share of FSNCs

and low-cost traffic, although it is much smaller in terms of the seats available compared to the major hub airports mentioned before. oneworld is the major airline alliance operating at London Gatwick. Cologne/Bonn airport is an example of an international airport with extensive low-cost traffic. The main alliance operating at Cologne/Bonn is Star Alliance; however, 76% of the total seat capacity offered is made up of low-cost traffic.

Figure 2-45: Airline alliances at major European airports

Source: OAG 2008

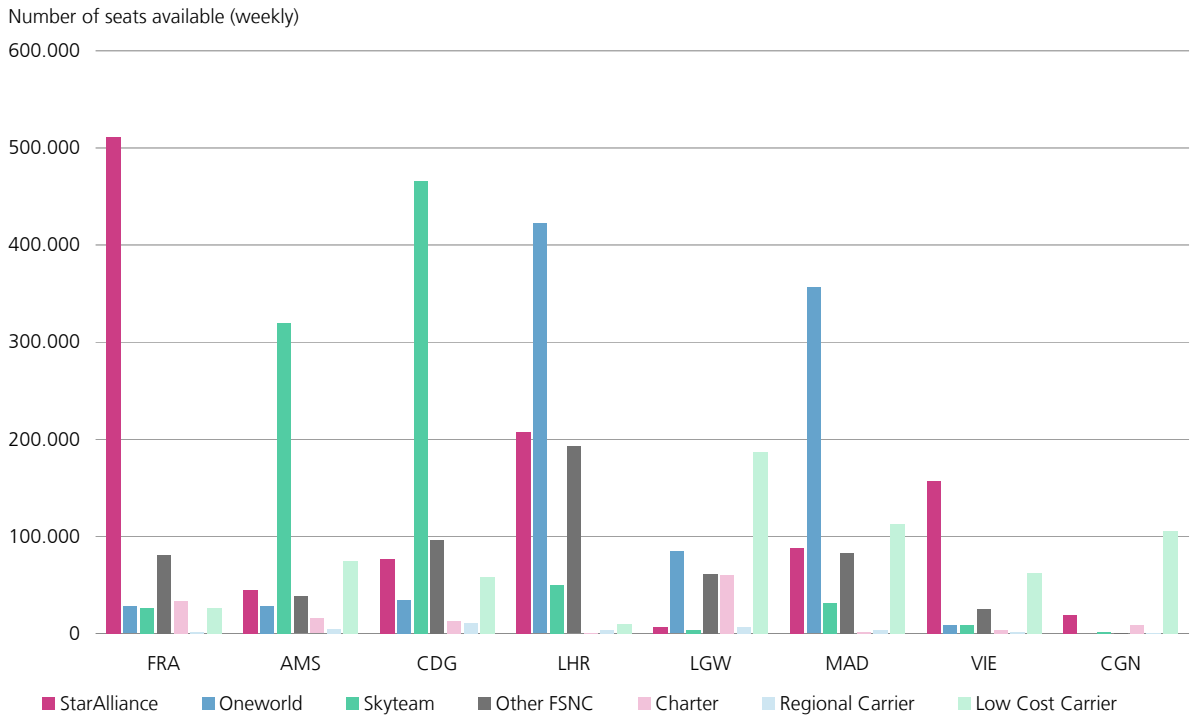
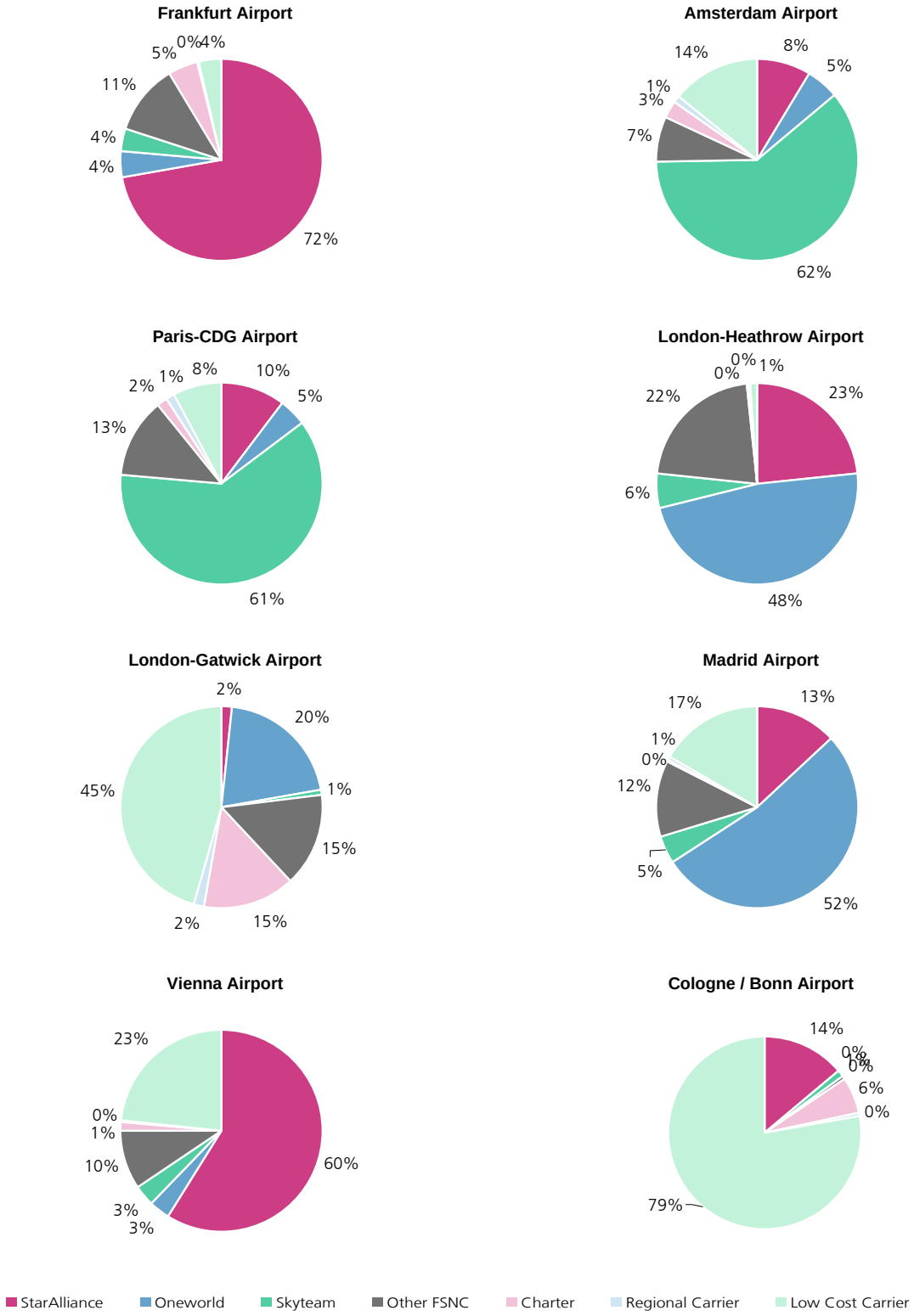


Figure 2-46: Market share of airline alliances at major European airports in detail

Source: OAG 2008



2.1.8 Competition

Figure 2-47: Share of flights offered, including code-share flights and actually operated in 2009

Source: OAG 2009

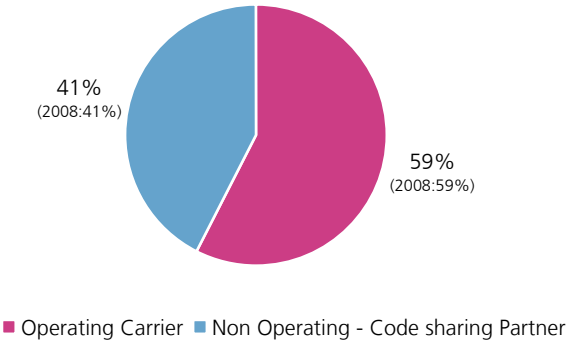


Figure 2-47 shows the share of flights departing from European airports (EU-27) in 2008 and 2009 per week which were offered in total, including code-share arrangements and those that were actually operated by an airline. Altogether, 205,000 flights were offered per week in 2009, whereas only 121,000 were actually operated. Therefore, 41% of the flights offered per week in 2009 were code-sharing flights. Code-sharing remained unchanged compared to 2008.

Figure 2-48: Ranking of airlines according to the number of code-sharing partners in Europe

Source: OAG 2009

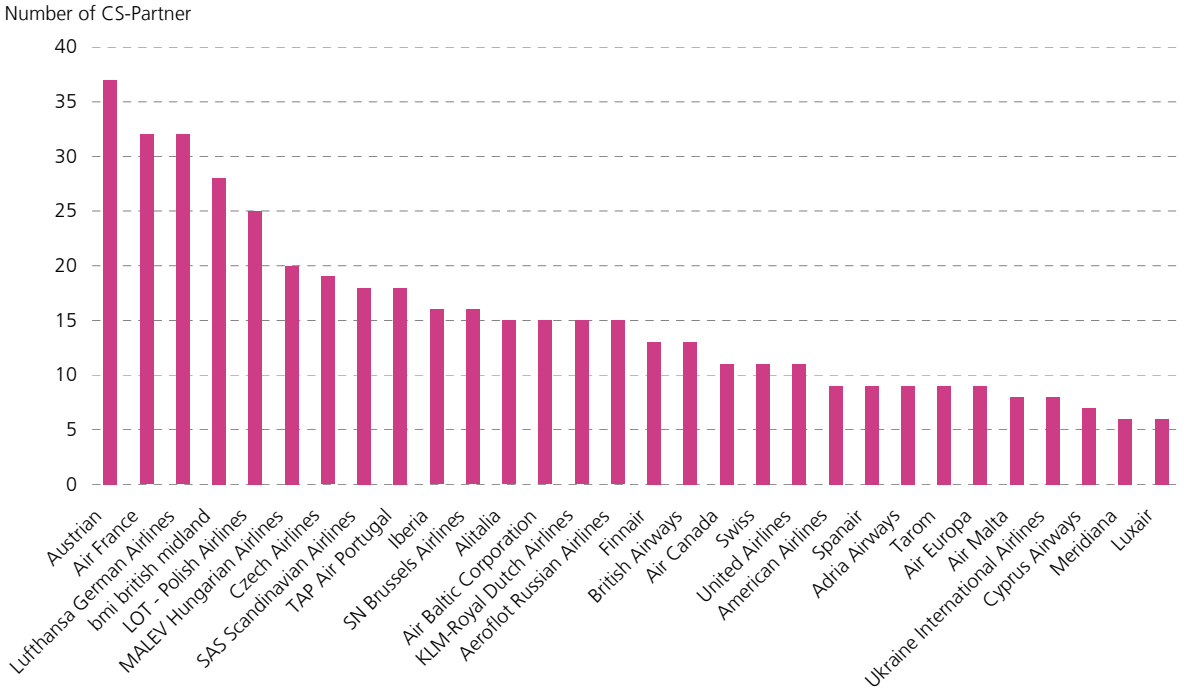
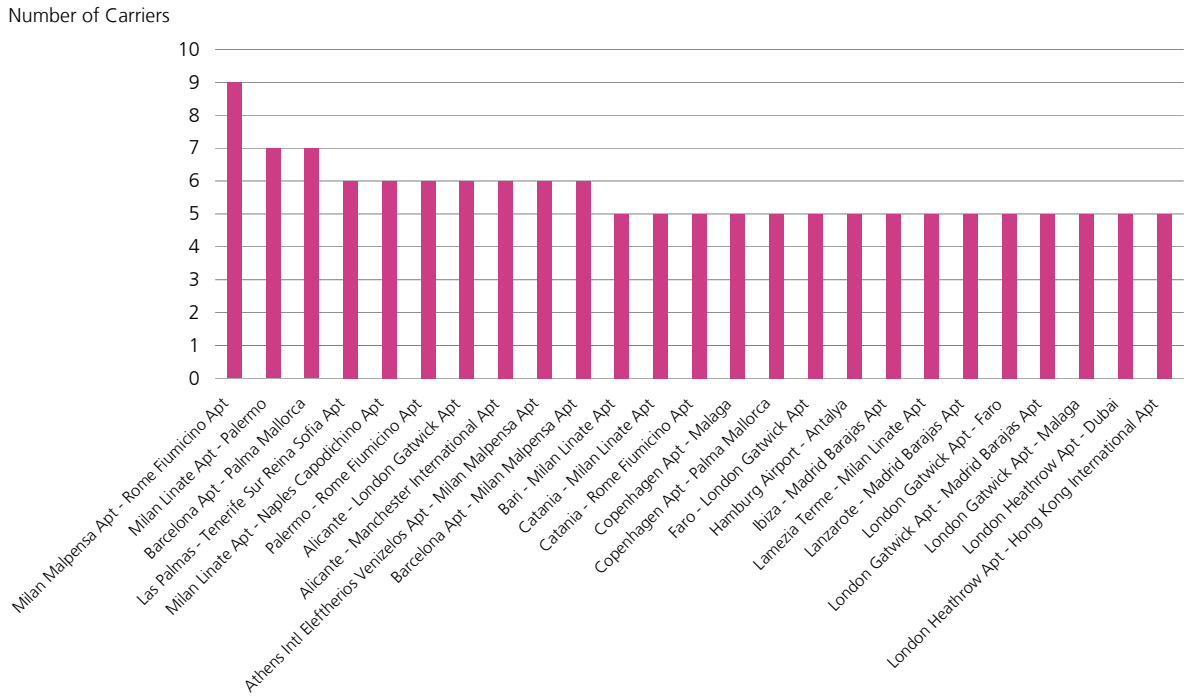


Figure 2-48 ranks airlines according to their number of code-sharing partners in Europe. The top three airlines are Austrian, Air France and Lufthansa, with 37, 32 and 32 code-sharing partners respectively. The number of code-sharing partners declines slowly, with Luxair having the

smallest number of code-sharing partners, namely six. As Figure 2-48 illustrates, the number of code-sharing partners does not depend on airline size. For example, Lufthansa has 32 partners, whereas British Airways only has 13 partners. In contrast, Austrian and LOT Polish Airlines have 37 and 25 code-sharing partners respectively.

Figure 2-49: Top routes in Europe in terms of the number of carriers operating

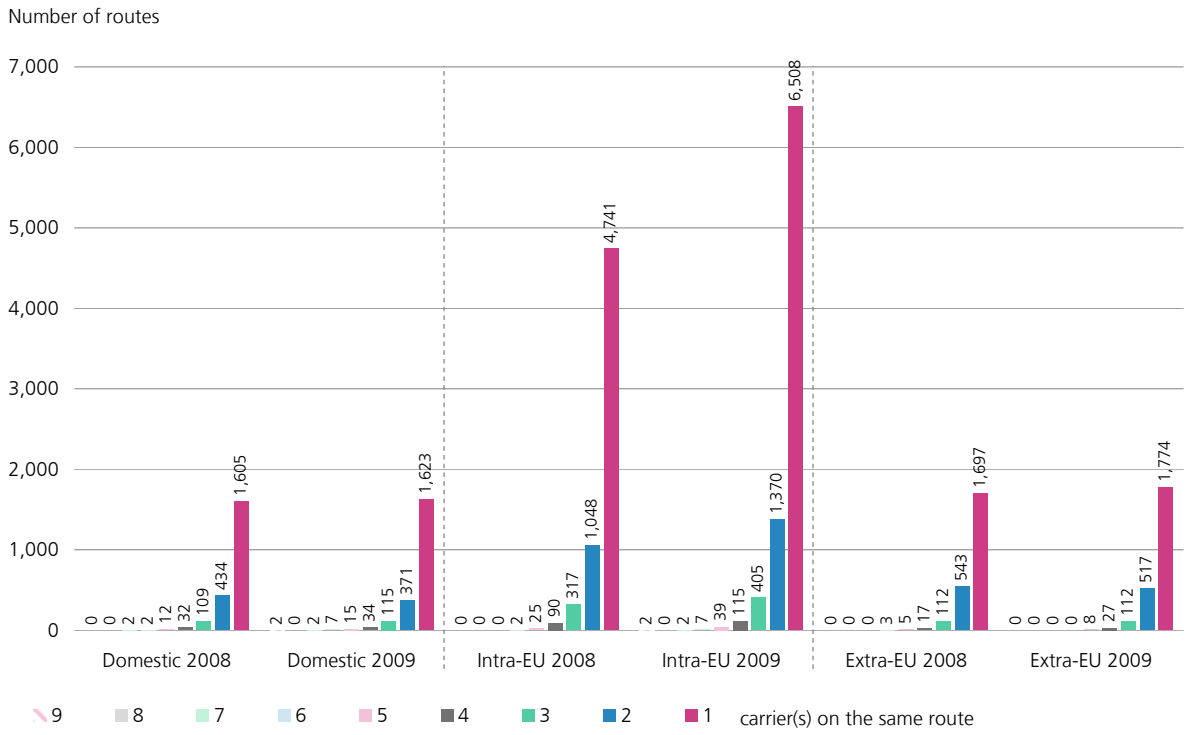
Source: OAG 2009



Closely related to airline alliances is the number of carriers operating on specific routes. Figure 2-49 shows the routes with the highest number of carriers. The number of carriers operating on a route is an indicator of the degree of competition. The route Milan Malpensa – Rome Fiumicino is served by 9 different carriers, followed by Milan Linate – Palermo and Barcelona – Palma de Mallorca with seven different carriers. The high number of different carriers on certain routes is often a result of low-cost operations.

Figure 2-50: Number of routes with one or more carriers in 2009

Source: OAG 2009



In order to give an indication of competition among carriers in the European network, Figure 2-50 shows the share of routes served by only one or by competing carriers for 2008 and 2009. In 2009, about 77% of the routes in Europe are served by only one carrier and a share of 16% by two carriers, thus only 7% of the routes in Europe are served by three carriers or more. In fact, Milan Malpensa – Rome Fiumicino and back are the only two routes served by 9 carriers in 2009.

Figure 2-51: Market entry / market exit in 2008 and 2009

Source: OAG 2009

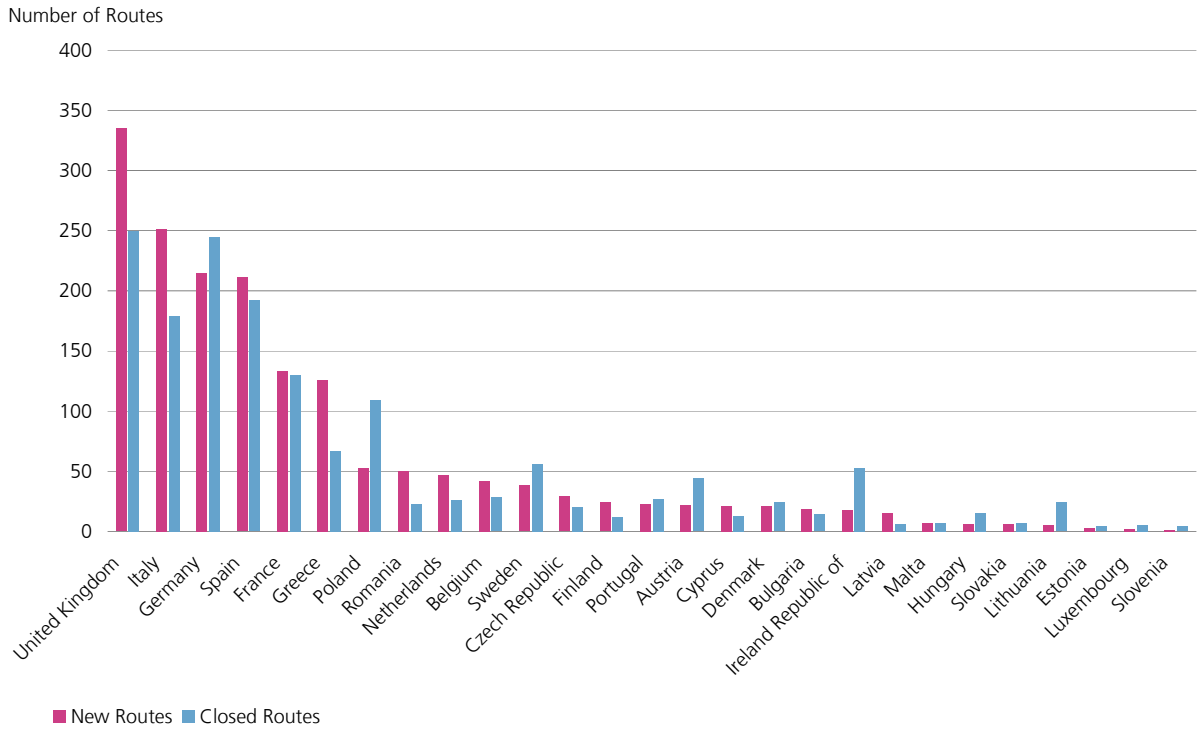


Figure 2-51 compares the number of new routes against the number of routes closed per country in 2008. As in 2008, there is no clear trend towards more or fewer routes in 2009. However, in 2007 there was a net increase of routes in almost in every country, although the high oil price and the financial crisis forced some airlines to reconsider their network strategy in terms of profitability.

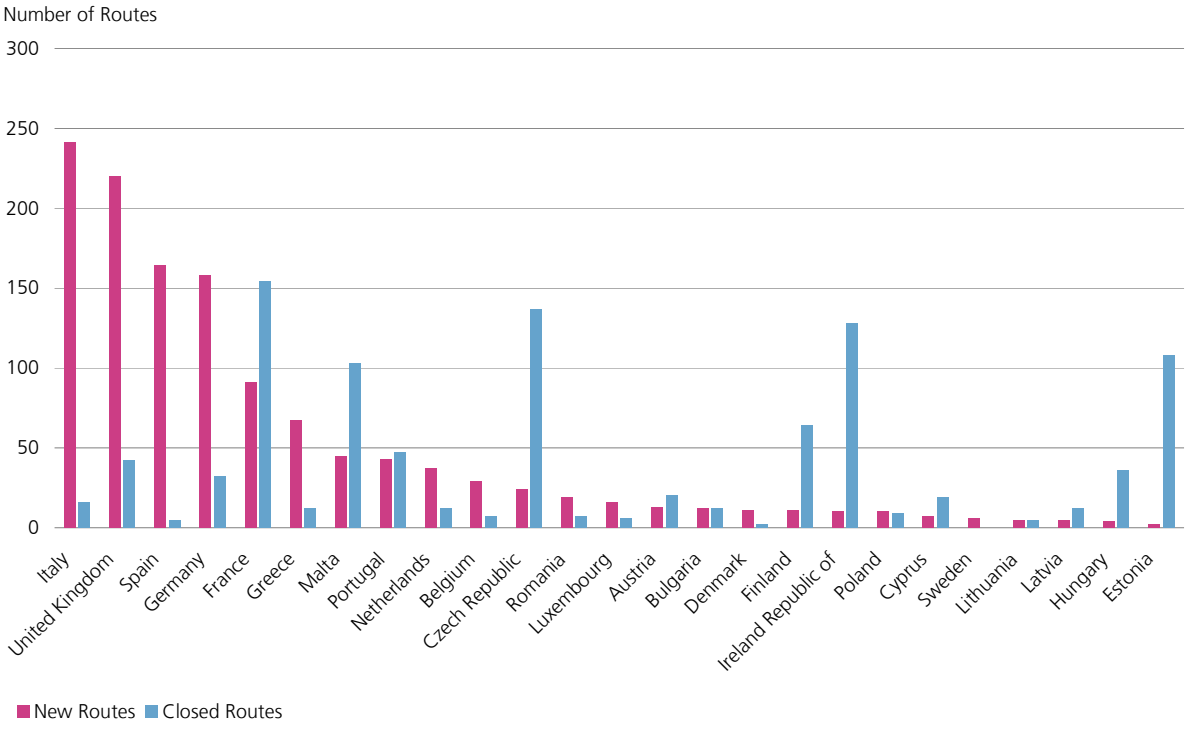
Figure 2-52 shows the number of new low-cost routes compared to those closed in 2009 by country. Especially in larger countries such as Italy, the United Kingdom, Spain or Germany, there is still a net increase in the number of routes, with the network of the Czech Republic being a striking counter example. The evolution of low-cost routes is clearly more dynamic and upward than for the entire set of routes, as a comparison of the Figures 2-51 and 2-52 reveals. The largest net changes in networks occur in Italy, the United Kingdom and Spain (descending order).

The market development of the low-cost segment with regard to new routes is, in many cases, (e.g. Germany and Spain) very different from the total market development, as a comparison between Figures 2-51 and 2-52 reveals. This is mainly due to the fact that Figure 2-51 looks at airlines as a whole and thus does not differentiate between different carrier types, e.g. LCCs and FSNCs. In contrast, Figure 2-51 displays only the development of the LCCs. Differences in net increases / net decreases between those figures mainly result from LCCs opening new routes between city pairs which are already served by a different carrier type, e.g. an FSNC. Such a case

does not represent a new route opened in Figure 2-51, as it is already served by a carrier regardless of its type. However, in Figure 2-52 this represents a new LCC route, because it was not served by any LCC previously. Therefore, a comparison of Figures 2-51 and 2-52 reveals the increased tendency of LCCs opening new routes which are already served by an airline of a different type, instead of developing new routes which had not been served by any carrier so far.

Figure 2-52: Market entry and market exit of low-cost carrier routes in 2009

Source: OAG 2009



The following tables show European airline market entries and exits in 2009. Most notable are the market entries of Olympic Air, which was founded as a privatised company following the demise of Olympic Airlines, and Lufthansa Italia, a subsidiary of the German carrier, based in Milan, exploiting the market after Alitalia reduced services from its north Italian hub. Cimber Air took over the Sterling Airlines AOC and other assets, subsequently rebranding the merged company as Cimber Sterling.

Table 2-14: Market entries of carriers in EU-27 Member States during 2009

Source: Ascend

Airline	Country	Founded	Remarks
Cimber Sterling	Denmark	1950	Re-branding of Cimber Air after it took over bankrupt Sterling Airlines
Transavia Denmark	Denmark	2009	Subsidiary of Dutch airline Transavia
flyLAL Charters Eesti	Estonia	2009	Charter division of flyLAL for services from Estonia
Bremenfly	Germany	2008	Market entry in 2009 with charter flights
Germania	Germany	1978	German wet lease operator, re-entered the market under its own brand in 2009
Hellenic Imperial Airways	Greece	2006	Market entry in 2009 on the route Birmingham-Athens-Jeddah
Olympic Air	Greece	2009	Founded with assets of Olympic Airlines
Viking Hellas Airlines	Greece	2009	Charter Operator based in Athens
Lufthansa Italia	Italy	2009	Lufthansa subsidiary based in Malpensa, operates services to various European destinations
Smartlynx Italia	Italy	2009	Subsidiary of Latvian airline Smartlynx
Trawel Fly	Italy	2009	Operating low-cost and holiday services
Star1 Airlines	Lithuania	2009	Rebranded HC Airways, holiday charter operator
UAB Avion Express	Lithuania	2005	Re-entry in the market for passenger flights with PSO in Sweden
Comlux Aviation Malta	Malta	2009	VIP Charter Operator
Efly	Malta	2009	Charter Operator
LOT Charters	Poland	2009	Charter division of LOT
Medallion Air	Romania	2009	Charter airline based in Bucharest, 1x MD-80
Andalus Lineas Aereas	Spain	2008	Market entry in 2009 with regional air services mainly from Gibraltar
Calima Aviacion	Spain	2003	Market entry in 2009 in the charter/wet lease market with 1 Boeing 737
Mint Airways	Spain	2009	Charter airline based in Madrid, 1x Boeing 757
Quantum Air	Spain	2009	Rebranded AeBal after sold by SAS, ceased operations in Jan 2010
FlyJamtlands	Sweden	2009	Founded by Sweden Air Holding for services between Östersund and Bromma

Several larger airlines exited the market in 2009. Among them are SkyEurope Airlines, a low-cost carrier from Slovakia and Air Comet from Spain, which operated low-cost, holiday and ethnic services both on short and long-haul routes. flyglobespan from the UK also filed for insolvency, as did MyAir from Italy and flyLAL from Lithuania. LOT from Poland closed its low-cost subsidiary CentralWings, while the Clickair brand exited the market after its merger with Vueling.

Table 2-15: Market exits of carriers in EU-27 Member States during 2009

Source: Ascend

Airline	Country	Ceased Operations	Remarks
Cimber Air	Denmark		Merged with Sterling Airlines, rebranded into Cimber Sterling
Axis Airways	France	7th December 2009	
L Avion	France	4th April 2009	Merged with OpenSkies
Blue Wings	Germany	Temporary suspension of AOC in April/May 2009, filed for insolvency in January 2010	
Olympic Airlines	Greece	29th September 2009	Newly founded after bankruptcy as Olympic Air
Air Vallee	Italy	5th November 2009	AOC suspended due to economic situation
MyAir	Italy	July 2009	AOC suspended due to economic situation
flyLAL	Lithuania	17th January 2009	AOC withdrawn due to economic situation
CentralWings	Poland	31st May 2009	Low-cost subsidiary of LOT, insolvency in June 2009
Seagle Air	Slovakia	23rd October 2009	Withdrawal of AOC in December 2009, insolvency in January 2010
SkyEurope Airlines	Slovakia	31st August 2009	
Aurora Airlines	Slovenia	2009	AOC withdrawn due to economic situation
Air Comet	Spain	22nd December 2009	AOC withdrawn due to economic situation
Clickair	Spain	2009	Merged with Vueling
Air Express in Sweden AB	Sweden		Taken over by MCA Airlines
MCA Airlines	Sweden	11th November 2009	AOC withdrawn due to economic situation
Nordic Regional	Sweden	24th January 2009	AOC withdrawn due to economic situation
Norwegian.se	Sweden		Rebranding/integration into Norwegian Air Shuttle
flyglobespan	United Kingdom	16th December 2009	UK low-cost and holiday airline, bankrupt

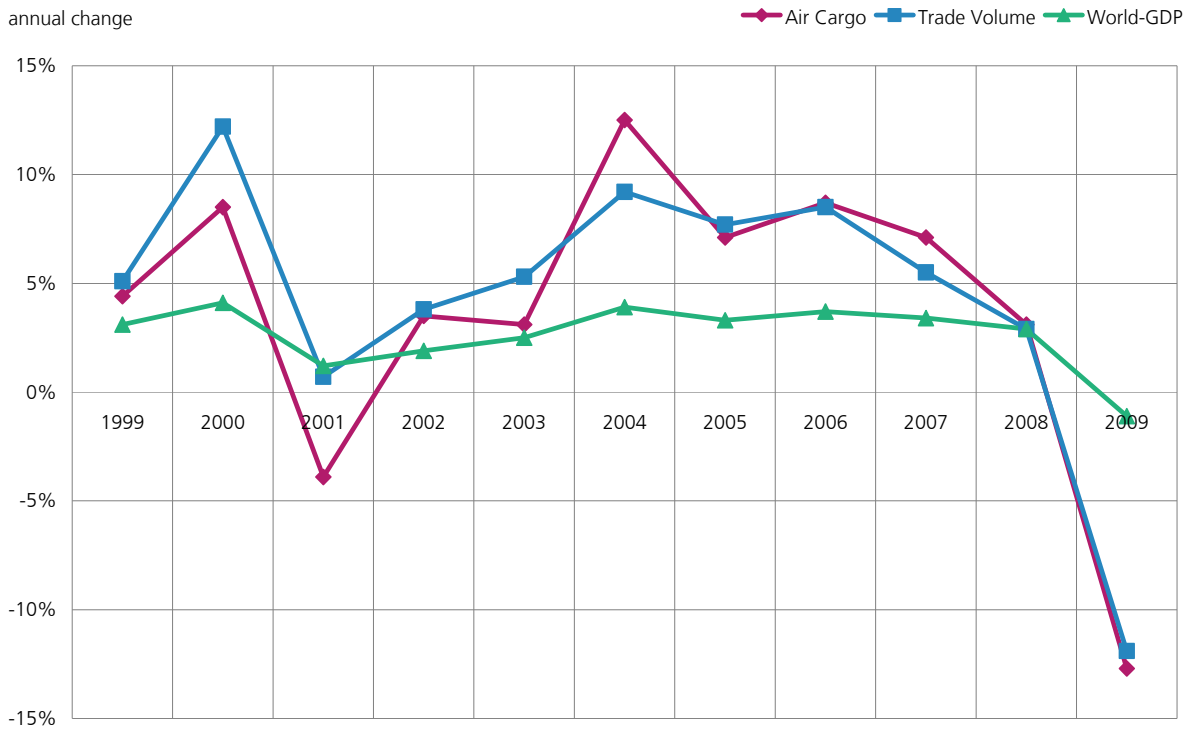
2.2 Cargo Airlines

In the shadow of the worst worldwide economic crisis in decades and a number of coexisting factors such as weaker demand, depressed/lower net yields and higher fuel costs significantly reduced air cargo growth once again and even more dramatically than the year before.

The illustration below shows the high correlation between worldwide economic growth, world trade and the growth of the air freight market, measured in freight tonne kilometres. As the crisis magnified, volumes slid further, resulting in a reduction in air trade of around 12 percent in 2009 - way beyond the 3.1 percent of the previous year.

Figure 2-53: Growth rates of the global economy, world trade and air freight (FTK)

Source: OECD, IATA and WTO



2.2.1 Cargo Airlines – Supply

There are various types of providers in the air freight market. These differ according to the length of the value chain and the breadth of services offered. Alongside the all-cargo and combination airlines, air freight services are also offered by integrators. Originally specialising in courier businesses, the major players in the sector – FedEx, UPS, TNT and DHL – now transport an increasing amount of general air freight. The integrators and express service providers are sustained by their global networks. Their processes are standardised, heavily automated and computerised.

Table 2-16: Freight tonne kilometres in 2009

Source: Ascend, AEA

AIRLINES No Ranking, Choice of some Cargo Airlines	Januar-December OperatorArea	2008 FTK	2009 FTK	 Change
FedEx	North America	15463	14140	-8,6%
UPS Airlines	North America	10024	9428	-5,9%
Korean Air	Asia	9006	8427	-6,4%
Cathay Pacific	Asia	8842	8256	-6,6%
Lufthansa	Europe	8283	6669	-19,5%
Singapore Airlines	Asia	7590	6560	-13,6%
China Airlines	Asia	5384	4959	-7,9%
Air France	Europe	5831	4685	-19,7%
Cargolux	Europe	5411	4651	-14,0%
British Airways	Europe	4837	4364	-9,8%
KLM Royal Dutch Airlines	Europe	4787	4094	-14,5%
EVA Air	Asia	4077	3630	-10,9%
Air China	Asia	3513	3496	-0,5%
Atlas Air	North America	4653	3477	-25,3%
Japan Airlines International	Asia	4543	3472	-23,6%
Asiana Airlines	Asia	3268	3131	-4,2%
LAN Airlines	Latin America and Caribbean	2907	2623	-9,7%
American Airlines	North America	2940	2429	-17,4%
United Airlines	North America	2805	2340	-16,6%

values in billion

Measured in terms of FTK, FedEx was – based on available data - by far the largest air freight carrier in 2009 with an overall total of 14,140 billion FTK. Second place is held by UPS with 9428 billion FTK. Following in third place by a considerable margin is Air France and KLM, with a total of 8,779 billion FTK. The table shows a selection of results available for cargo airlines in 2009 compared to the change in 2008. Cargo traffic includes freight and mail, scheduled and charter, measured in freight tonne kilometres.

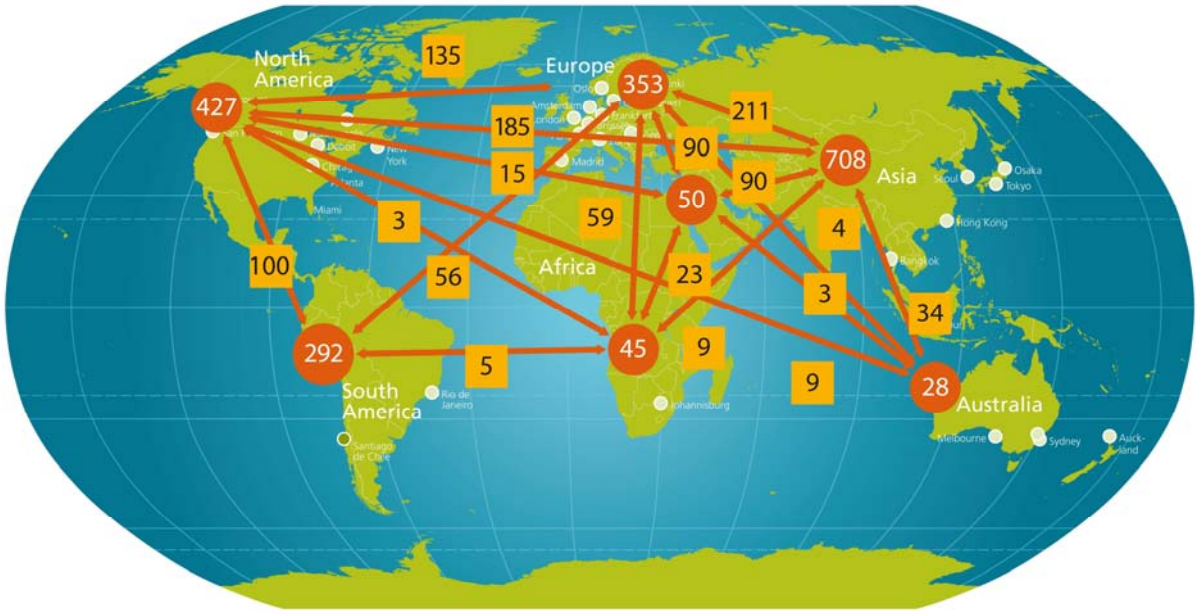
2.2.1.1 Cargo Airlines - Freight Capacity

A general analysis of OAG data over one week in July 2009, with regard to the potential freight capacity provided by all flights flown by belly-cargo and all-cargo providers, gives the results shown in Figure 2-54. The highest capacity was once again provided on the Europe-Asia routes, with 211 thousand tonnes (last year 229), followed by North America-Asia routes, with 185 (same result as last year). The third highest level was achieved on services between Europe and North America, but at only 135 (144) thousand tonnes this fell well below the first two routes.

Following behind by a substantial margin were the supply of 90 (93) thousand tonnes on Asia-Middle East routes, 100 (94) for North America-South America and 90 (87) for Europe-Middle East. The data for inbound and intra-regional freight capacities in the various parts of the world is as follows: the two areas offering the most inbound freight capacity within a region are Asia and North America with 708 (606) and 427 (480) respectively. Well below this are both Europe with 353 thousand tonnes and South America with 292 thousand tonnes.

Figure 2-54: World airline traffic 2009: air freight capacity in thousand tonnes (3rd week in July 2009)

Source: OAG, DLR



2.2.1.2 Cargo Airlines – Demand

The economic crisis reduced air cargo growth once again and even more dramatically than the year before. The level of intercontinental connections, measured in freight tonne kilometres (FTK), is decreasing in particular. Measured against the global volume of air freight using the AEA data, the European domestic air freight market has shown a slightly larger decline with -20.7%, while the freight traffic to North Africa has increased by almost the same percentage (+22.9%).

Table 2-17: Scheduled cargo services of AEA member airlines in 2009

Source: AEA

2009 January - December	Traffic million TFTKs	change % vs. 2008
Domestic (1)	84.8	-20.7
Cross-border Europe (2)	661.1	-11.9
Total Europe (1+2)	**746.0**	**-13.0**
Europe - North Africa (3)	225.3	22.9
Europe - Middle East (4)	1.172.7	16.7
Intl Short/Medium Haul (2+3+4)	**2,059.2**	**6.2**
North Atlantic (5)	8,849.2	-15.9
Mid Atlantic (6)	1,403.5	-2.2
South Atlantic (7)	2,286.0	-16.0
Europe - Sub Saharan Africa (8)	3,187.1	-6.7
Europe - Far East/Australasia (9)	12,796.0	-22.8
Total Longhaul (5 to 9*)	**28,522.7**	**-17.7**
Total International (2 to 9*)	**30,581.8**	**-16.4**
Total Scheduled (1 to 9*)	**30,666.7**	**-16.5**

* Long-haul region 'Other' is not shown above, but is included in the total

Freight traffic is measured in TFTK (Total Freight Tonne Kilometres) all-cargo services, excluding mail.

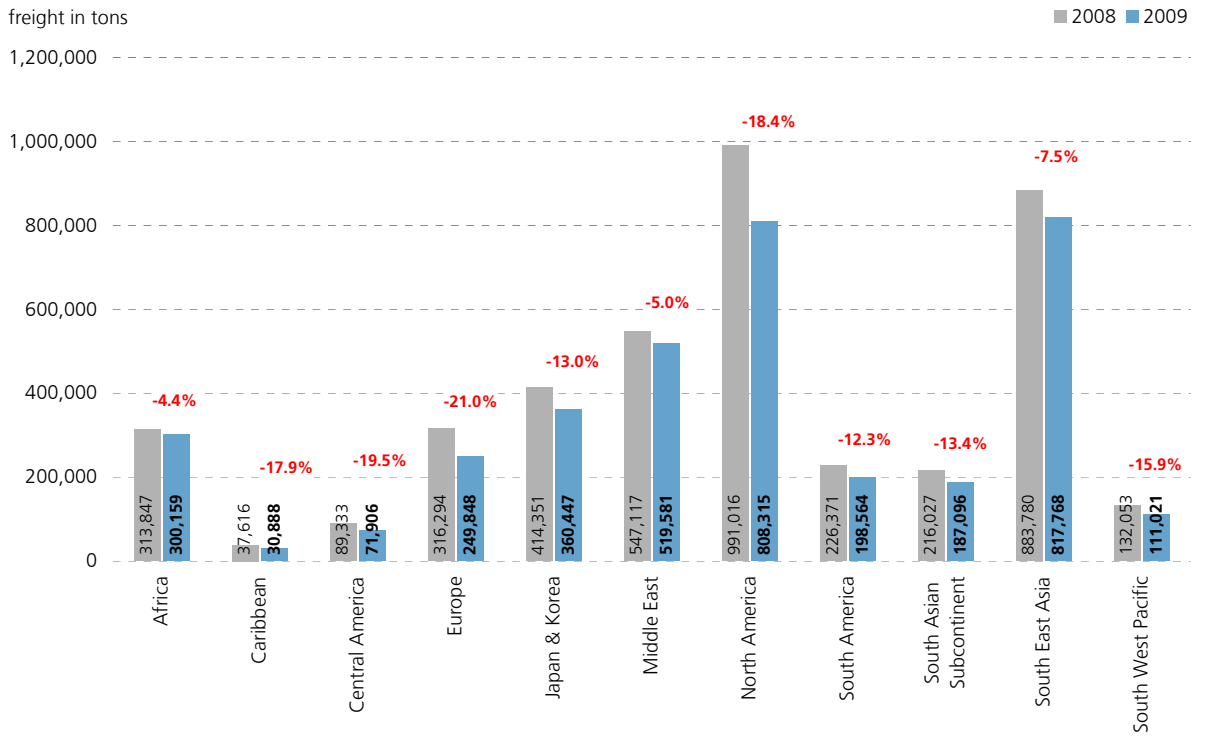
2.2.1.3 Cargo Airlines - Tonnes of Freight

According to IATA CASS data[8], the air freight market within Europe has suffered a clear decline of 21.0 percent. The flow of freight out of Europe in general saw a decline of 13.9 percent in 2009 compared to the previous year.

[8] The IATA CASS System (Cargo Accounts Settlement System) is a system to simplify the billing between freight forwarders and airlines. CASS data is billing data taken from the air waybill's data fields. Analyses of cargo based on IATA airway bills are export-oriented (documents to retrace the cargo's origin and destination). At present, CASS data is available from the following **EU countries**: Austria, Belgium, Cyprus, Denmark, Czech Republic, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain incl. the Canary Islands, Sweden, Switzerland, Turkey and the United Kingdom. Data covering the EU-27 is provided by Eurostat; please refer to Table 1-5 in the first chapter.

Figure 2-55: Freight out of European CASS member states to various regions, 2008 vs. 2009

Source: IATA CASS

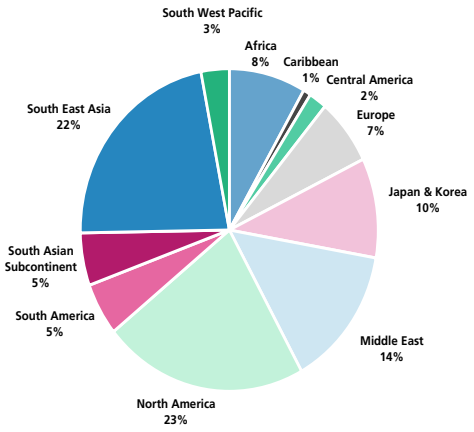


If the proportion of the demand for air freight in 2009 is considered on the basis of the countries covered by the IATA CASS system, then the major flows of air freight out of Europe to North America and South East Asia represented a 23 and 22 percent share of the total.

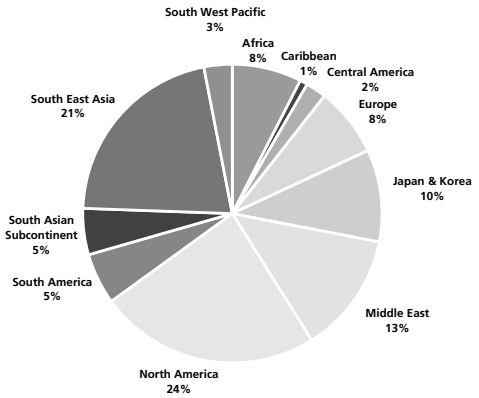
Figure 2-56: Percentage distribution of freight out of Europe in 2009

Source: IATA CASS

2009



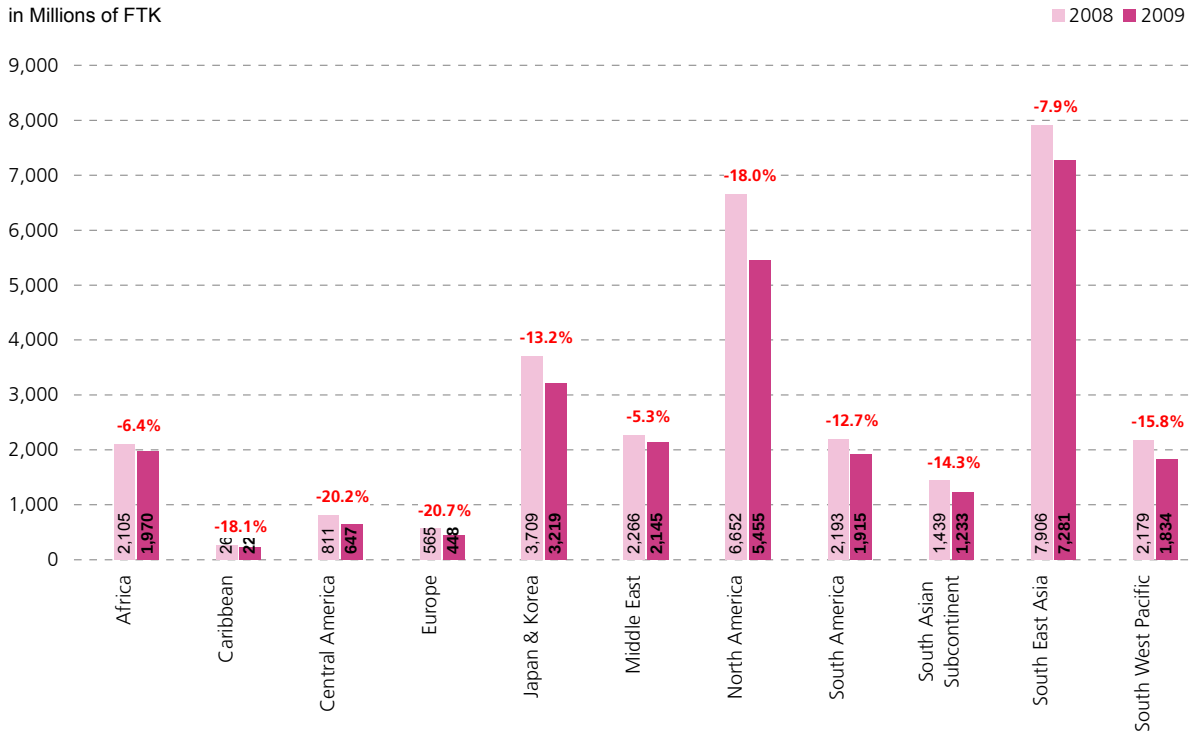
2008



2.2.1.4 Cargo Airlines - Freight Kilometres

Figure 2-57: Air freight traffic originating in Europe carried by CASS members by region; 2008 vs. 2009

Source: IATA CASS



The data for air freight carried by AEA members in 2009 reveals the following market leaders in Europe: the German carrier Lufthansa (with 6,669.0 TFTK), superseded only when the figures of the merged Air France (4,685.5 TFTK) and KLM (4,093.5 TFTK) are combined. Cargolux (4,651.3 TFTK) and British Airways (4,364.0 TFTK) complete the core group.

	2009 January - December	Traffic million TFTKs	Change % vs. 2008
LH	DEUTSCHE LUFTHANSA AG	6,669.0	-18.4
AF	AIR FRANCE	4,685.5	-19.7
CV	CARGOLUX	4,651.3	-12.8
BA	BRITISH AIRWAYS PLC	4,364.0	-7.2
KL	KLM ROYAL DUTCH AIRLINES	4,093.5	-14.5
VS	VIRGIN ATLANTIC AIRWAYS	1,333.1	-12.4
LX	SWISS INTERNATIONAL AIRLINES	1,095.5	-12.2
IB	IBERIA	927.2	-12.3
TK	TURKISH AIRLINES	721.8	40.9
AY	FINNAIR	484.4	-10.7
OS	AUSTRIAN	341.5	-21.0
AZ	ALITALIA	335.2	
SK	SAS - SCANDINAVIAN AIRLINES	299.8	-42.3
TP	TAP PORTUGAL	289.6	-13.8
BD	BMI	92.5	-23.0
SN	BRUSSELS AIRLINES	87.3	-6.0
LO	LOT POLISH AIRLINES	55.5	-29.7
VV	AEROSVIT	37.9	-15.4
OA	OLYMPIC AIRLINES	30.7	-44.1
OK	CZECH AIRLINES	22.4	-18.0
CY	CYPRUS AIRWAYS	10.5	-78.0
PS	UKRAINE INTERNATIONAL AIRLINES	9.5	21.5
KM	AIR MALTA	7.4	-10.7
MA	MALEV HUNGARIAN AIRLINES	4.0	-63.7
RO	TAROM ROMANIAN AIR TRANSPORT	3.3	46.4
JU	JAT AIRWAYS	2.0	-40.4
OU	CROATIA AIRLINES	1.9	-17.3
JP	ADRIA AIRWAYS	1.7	-14.2
LG	LUXAIR	0.0	-3.8
	∑ AEA	**30,666.7**	**-16.5**

Freight traffic is measured in TFTK (Total Freight Tonne-Kms) on passenger and all-cargo services, excluding mail.

Table 2-18: AEA members' air freight traffic in 2009

Source: AEA

2.2.2 Cargo Fleet

2009 saw considerable changes in size and composition of the world's freighter fleet. The integrators FedEx and UPS continue to operate the largest freighter fleets in the world, but as with the vast majority of all operators, fleet sizes were considerably reduced in response to the declining demand from the manufacturing industry and freight forwarders for air cargo services. On average, the 20 largest cargo operators, as measured by fleet payload capacity, reduced the capacity of their fleets by about 10%. Nevertheless, the 20 largest cargo operators still provide more than half of the world's capacity on dedicated cargo aircraft.

Among the 20 largest operators, only two from the EU-27 can currently be found – Cargolux and DHL. The structure and business model of DHL, however, underestimates the relevance of the integrator, which is owned by Deutsche Post. In addition to the majority-owned subsidiaries DHL Aero Expreso, DHL Ecuador, DHL de Guatemala, DHL Air UK, European Air Transport and SNAS, DHL also has stakes in AeroLogic, Air Hong Kong, Blue Dart Aviation, Polar Air Cargo and Tasman Cargo Airlines. ABX Air is also an important service provider for DHL.

Table 2-19: The 20 largest cargo airlines by fleet payload capacity at year-end 2009

Source: Ascend Online Fleets, data as of January 2010

Pos. 2009	Pos. 2008	Operator	Operator Country	Fleet Payload Capacity in t 2009	Aircraft in Fleet 2009	Fleet Payload Capacity in t 2008	Aircraft in Fleet 2008	Year-over-year change payload capacity	Year-over-year change fleet size
1	1	FedEx	USA	**15,022**	**333**	15,761	353	-4.7%	-5.7%
2	2	UPS Airlines	USA	**10,577**	**210**	12,161	242	-13.0%	-13.2%
3	3	Korean Air	South Korea	**2,585**	**22**	2681	24	-3.6%	-8.3%
4	5	China Airlines	Taiwan	**2,479**	**20**	2479	20	0.0%	0.0%
5	4	Cathay Pacific	China/Hong Kong	**2,215**	**19**	2538	22	-12.7%	-13.6%
6	17	Kalitta Air	USA	**1,914**	**18**	1181	11	62.0%	63.6%
7	10	Volga-Dnepr Airlines	Russia	**1,838**	**18**	2030	22	-9.4%	-18.2%
8	9	DHL Group*	Multinational	**1,711**	**53**	2031	62	-15.7%	-14.5%
9	7	Cargolux	Luxemburg	**1,612**	**13**	2094	17	-23.0%	-23.5%
10	6	ABX Air	USA	**1,508**	**38**	2251	83	-33.0%	-54.2%
11	12	Singapore Airlines Cargo	Singapore	**1,488**	**12**	1612	13	-7.7%	-7.7%
12	11	Southern Air	USA	**1,401**	**13**	1626	15	-13.8%	-13.3%
13	14	EVA Air	Taiwan	**1,327**	**15**	1381	16	-3.9%	-6.3%
14	15	Antonov Airlines	Ukraine	**1,320**	**9**	1380	10	-4.3%	-10.0%
15	13	Evergreen International Airlines	USA	**1,308**	**12**	1403	13	-6.7%	-7.7%
16	25	Emirates Airline	UAE	**1,167**	**10**	987	9	18.2%	11.1%
17	8	Atlas Air	USA	**1,039**	**9**	2064	18	-49.7%	-50.0%
18	24	Nippon Cargo Airlines	Japan	**992**	**8**	992	8	0.0%	0.0%
19	26	Libyan Air Cargo	Libya	**985**	**28**	922	27	6.9%	3.7%
20	27	Polet Russian Air Company	Russia	**980**	**8**	900	6	8.9%	33.3%
		Total fleet operated by 20 largest operators		**53,468**	**868**	59,213	1014	-9.7%	-14.4%
		Percentage of world cargo fleet		**52.4%**	**28.4%**	53.2%	30.5%		

*) DHL Group includes DHL Aero Expreso, DHL Ecuador, DHL de Guatemala, DHL Air, European Air Transport and SNAS.

Table 2-20: Cargo aircraft in service at year-end 2008/2009

Source: Ascend Online Fleets, data as of January 2010

Aircraft Class Max. Payload	2009	2008	Change
1000–10,000 kg	1177	1219	-3.4%
10,001–25,000 kg	530	649	-18.3%
25,001–50,000 kg	729	796	-8.4%
50,001–100,000 kg	311	322	-3.4%
100,001–250,000 kg	311	336	-7.4%
Total cargo fleet	**3058**	**3322**	**-7.9%**

Table 2-20 shows the development of the world cargo aircraft fleet from 2008 to 2009. The number of aircraft in active service fell considerably by almost 8%. This is not surprising, given the strong decline in demand, which reached double-digit values in most markets compared to 2008. Particularly the fleet size in the group of smaller cargo aircraft with a payload of 10 to 25 tonnes was reduced by more than 18%. This group contains aircraft such as the Boeing 727 and DC-9, which often have an age in excess of 30 years at the time of retirement.

The number of cargo aircraft temporarily withdrawn from service has reached an unprecedented peak. At the end of 2009, almost 900 freighters were in storage. This is significantly more than in the case of post-2001 years, when air transport sector faced its previous major crisis.

Figure 2-58: Cargo aircraft in temporary storage on 31st December 2009

Source: Ascend Online Fleets, data as of January 2010

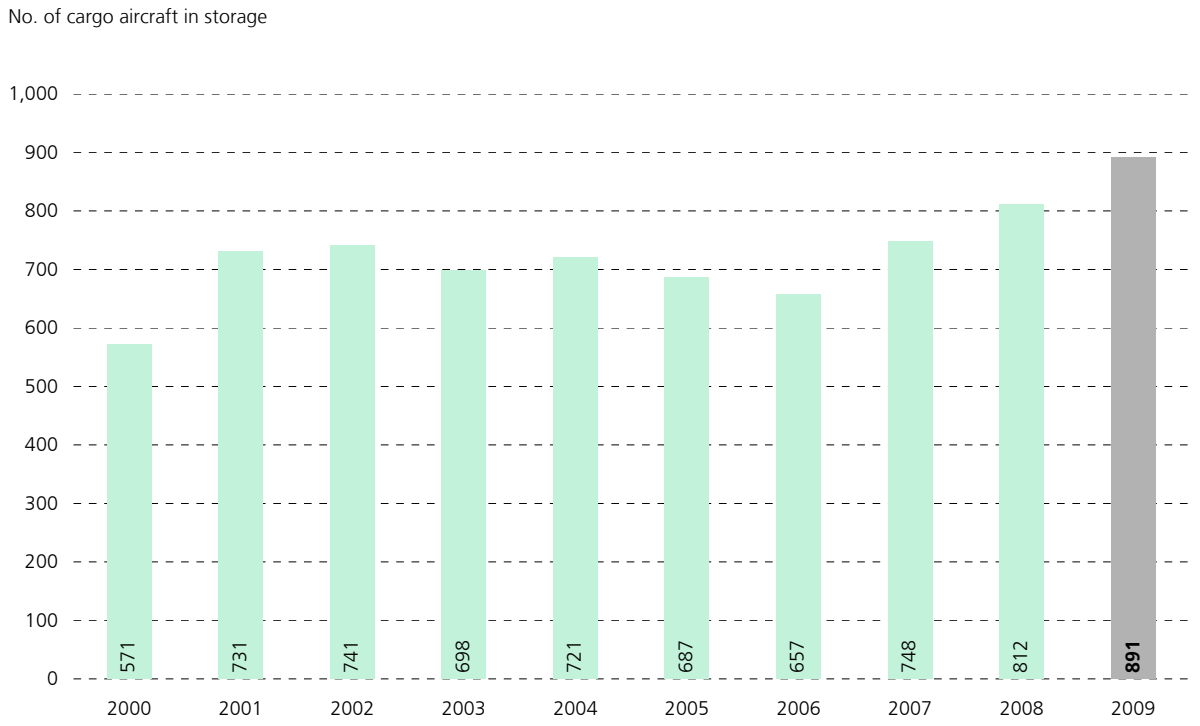


Table 2-21 shows the average age of the world cargo aircraft fleet. In comparison to the world passenger aircraft fleet, the cargo fleet is relatively old. Many of the fleet are passenger aircraft that have been converted and are now enjoying a second life as a freighter. Due to the high number of freighter retirements (130 aircraft were permanently withdrawn from service during 2009, while 892 are temporarily stored), conversions (62 passenger aircraft converted) and new deliveries (32 freighters delivered), the average age of freighters decreased from 25.1 years at the end of 2008 to 24.7 years at the end of 2009.

Table 2-21: Average age in years of cargo aircraft at year-end 2008/2009

Source: Ascend Online Fleets, data as of January 2010

Aircraft Class Max. Payload	Aircraft Age in Years 2009	2008
1000–10,000 kg	27.6	27.3
10,001–25,000 kg	32.9	33.2
25,001–50,000 kg	21.1	21.6
50,001–100,000 kg	20.0	20.0
100,001–250,000 kg	13.2	14.5
Total cargo fleet	**24.7**	**25.1**

The group of aircraft with a very high payload in excess of 100t is particularly noteworthy, as its average age declined from 14.5 years to 13.2 years. Apparently, airlines prefer to use new and

more efficient aircraft in this group. While only 311 aircraft remained operational in this group, 24 freighters in this category were newly delivered in 2009, among them 16 Boeing 777-200LRF and 8 Boeing 747-400F/ERF.

2.2.3 Cargo Airlines - Financial Performance

While 2008 was the period in which the economic crisis had just begun, it impacted heavily upon the airline industry in 2009. This trend was especially visible in the air cargo industry, where demand fell dramatically within a few months in many cases and led to enormous declines in revenues and operating results.

The best performer in absolute cargo revenues in the second and third quarters of 2009 was **Air France-KLM Cargo,** which achieved revenues of € 1.115 billion during that time span. Nevertheless, the company had to simultaneously cope with the highest relative revenue decline in the group of selected airlines chosen for the analysis in this chapter. In total, revenues of the Air France-KLM Cargo group fell by 41% compared to the second and third quarters of 2008. This also influenced the operating result, which decreased from € 26 million in 2008 to € -344 million in 2009, accompanied by a 19.3% reduction of revenue tonne kilometres and a 1.6% fall in the cargo load factor.

The trend at **Lufthansa Cargo** was similar. It reported a 38.5% decline in revenues from € 1.497 billion in the second and third quarters of 2008 to € 920 million in the second and third quarters of 2009. During the same time span the operating result decreased from € 114 million to € -128 million. Again, the reason for this development can be seen in the reduced demand. Lufthansa Cargo transported 95 million fewer tonnes of cargo in 2009 than one year before. Correspondingly, the overall load factor decreased by 1.4%, while the revenue tonne kilometres declined by as much as 12.9%.

In line with the other big cargo operators in Europe, **British Airways** also had to cope with the difficult economic circumstances in 2009. Although the company was able to achieve an increase in revenue tonne kilometres of 0.9% between the second and third quarters of 2008 and the same time span in 2009, this moderate growth was not enough to influence the overall financial performance. In contrast, revenues declined from € 426 million in 2008 to € 295 million in 2009, which marks a reduction of 30.8%. In addition, the number of tonnes of cargo carried fell from 404 million to 377 million in the same time span.

To summarise the results of the situation of cargo operators in 2009, it can therefore be stated that the second and third quarters of this year were obviously strongly affected by the economic crisis and the resulting low demand for air cargo services. These difficult circumstances contributed to a very tense situation on the cargo market and greatly weakened the financial position of many airlines, especially those who are integrators and also had to cope with reduced demand in their passenger businesses in 2009.

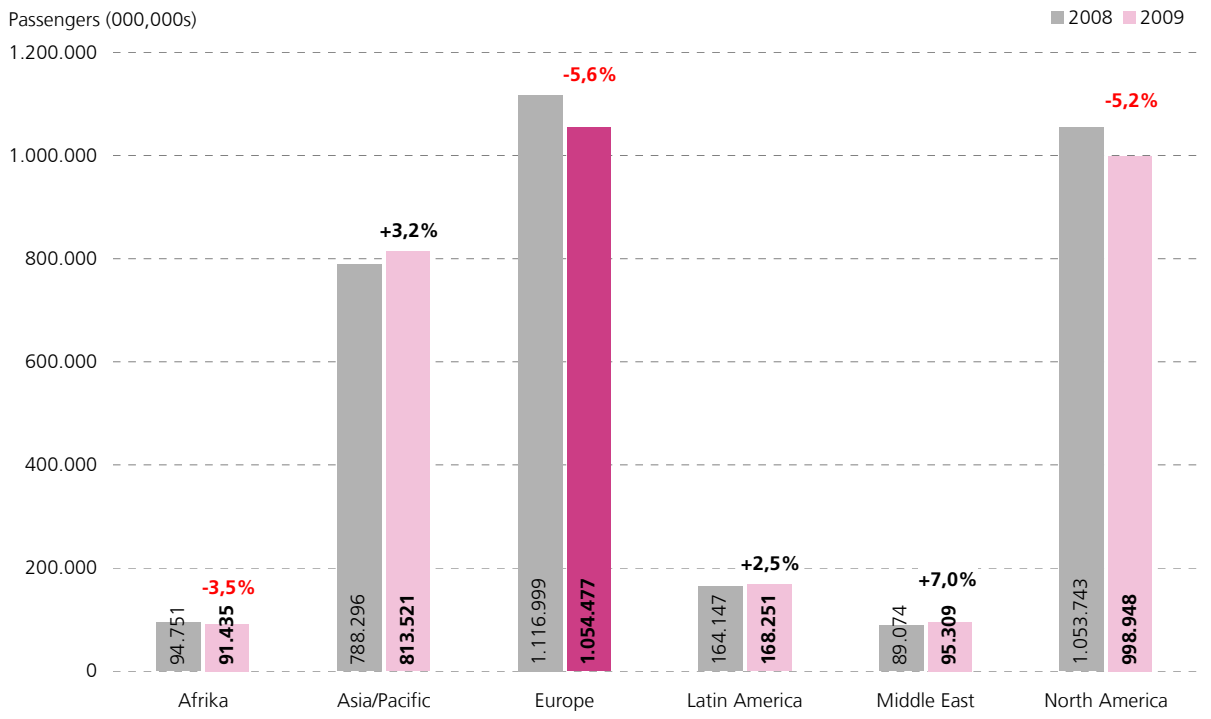
3 Airports

3.1 Passengers

The total number of passengers[9] handled worldwide in 2009 was 3.222 billion and thus is 2.6% lower than in 2008. Worldwide international services showed a reduction of 4.0% but were partly levelled off by a smaller reduction of passenger numbers (-1.2%) on domestic flights, which accounted for 53% of global air traffic. The global financial crisis continued to affect the development of global air traffic until the second quarter of 2009. Thereafter, air traffic started to grow. Total growth in passenger numbers was 0.2% in the 3rd quarter and 3.7% in the 4th quarter of 2009 (compared to the corresponding quarters in 2008). Here, domestic passenger numbers grew more strongly than international numbers. We have already seen growth rates of 2.6% and 4.6% for quarters 3 and 4 in the domestic segment, whereas international passenger numbers declined by 2.2% in the 3rd quarter and grew by 2.7% in the 4th quarter of 2009.

Figure 3-1: Passengers by region

Source: ACI[10], calculations by DLR



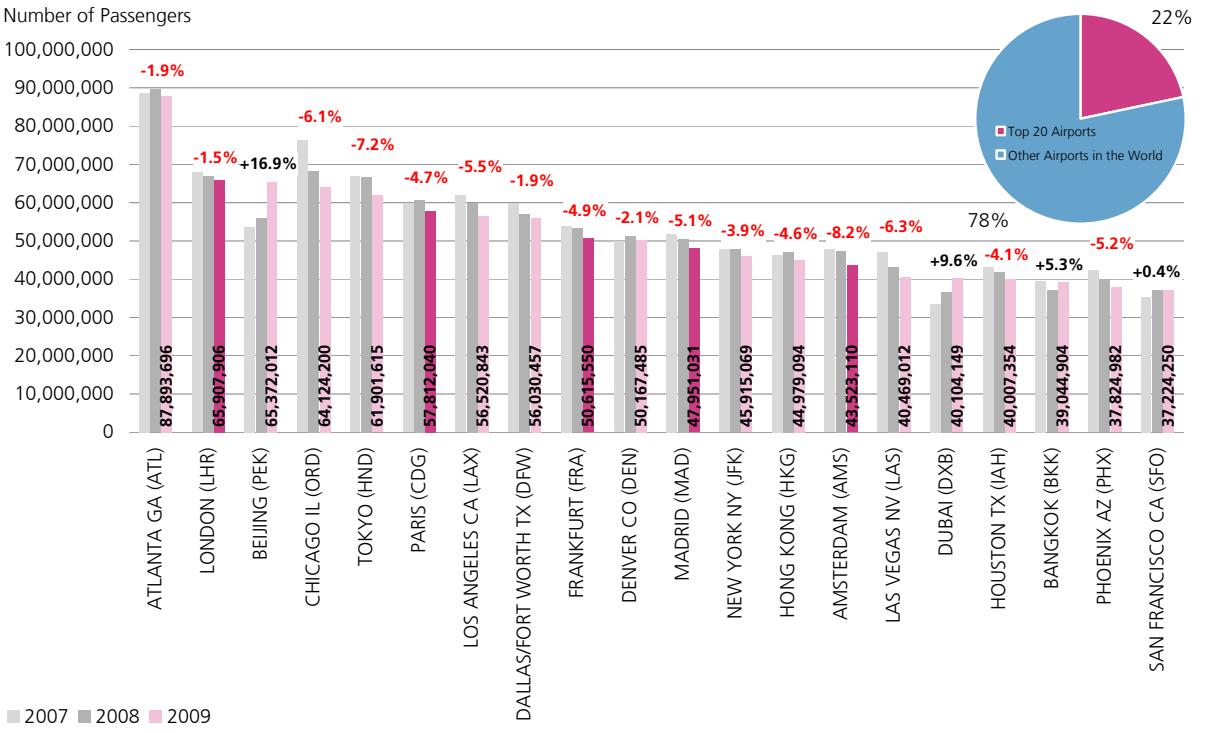
The largest declines in air passenger numbers are in the markets of Europe and North America. Here, passenger numbers declined by more than 5% compared to 2009. In Africa, passenger numbers fell by 3.5%. One reason for Africa having a smaller decline in passenger numbers may

[9] Passenger numbers include enplaned and deplaned passengers, transit passengers counted once
[10] As by ACI, "*PaxFlash* and *FreightFlash* statistics are based on a significant sample of airports that provide regular monthly reports to ACI. They represent approximately 60% of total passenger traffic and

be the high number of developing and emerging national economies which remained largely unaffected by the global financial crisis in 2008/2009. However, there were also positive trends in some regions of the world. Total passenger numbers grew by 2.5% in the Latin American region, as this region was not hit so hard by the financial crisis due to the high share of developing countries. Passenger numbers climbed by 3.2% in the Asian region and rose by as much as 7.0% in the Middle East, thus strengthening its role as a link between Asia and Europe.

Figure 3-2: The 20 largest airports in terms of commercial air passengers worldwide

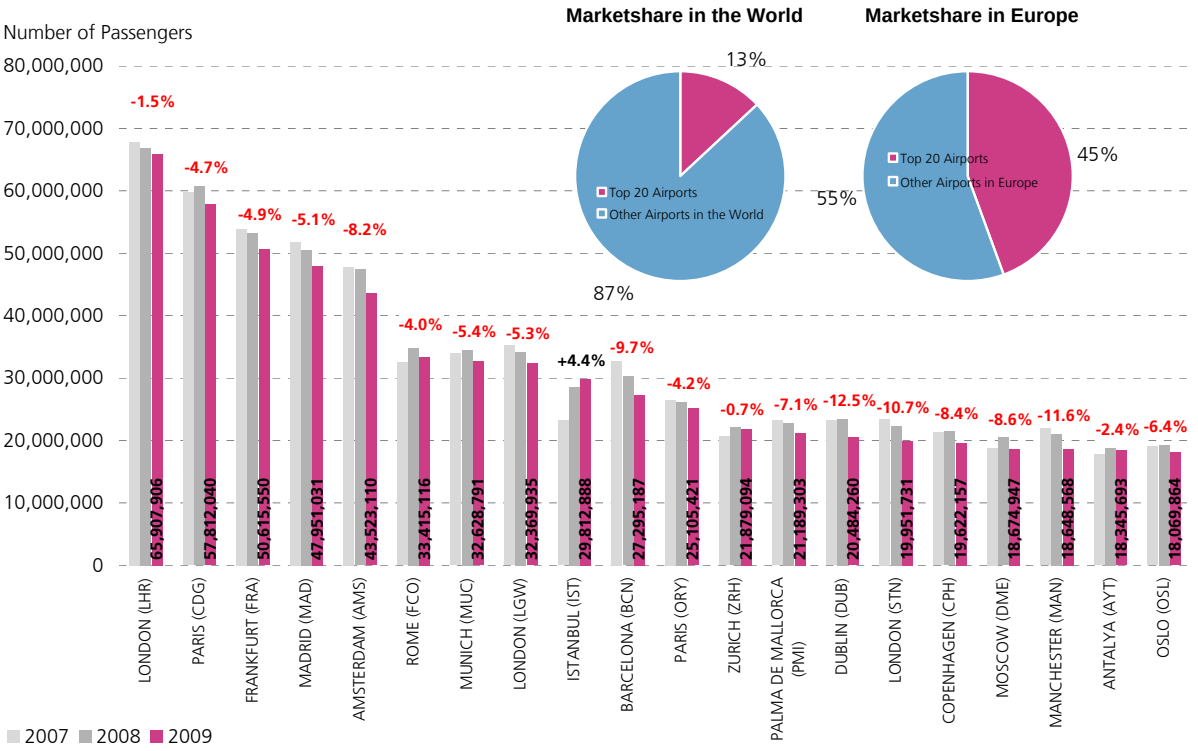
Source: ACI 2010, calculations by DLR



70% of total freight traffic worldwide. Commentary, tables and charts are based on data submitted by participating airports" (ACI Media Release as of 3 February 2010).

Figure 3-3: The 20 largest airports in terms of air passengers in Europe

Source: ACI 2010, calculations by DLR



Total commercial passenger numbers amount to 88 million passengers for Atlanta Hartsfield-Jackson International (-1.9%). Of EU airports, London Heathrow is ranked 2nd with nearly 66 million passengers (-1.5%). Beijing airport is now ranked 3rd due to a massive increase in passenger numbers of 16.9%. Against the general tendency of decreases, Dubai and Bangkok also show a considerable increase of passenger numbers (+9.6% and 5.3%, respectively). Last year's second-placed airport can now be found in 4th place: Chicago O'Hare International handled 64 million passengers in 2009 and thus lost 6.1% compared to 2008. EU airport Paris Charles de Gaulle is in 6th place with almost 58 million passengers in 2009 (-4.7%). Frankfurt/Main (51 million passengers, -4.9%), Madrid Barajas (48 million passengers, -5.1%) and Amsterdam Schiphol (44 million passengers, -8.2%) follow in positions 9, 11 and 14 respectively. The reason for London Heathrow moving 10 places upwards compared to the top 20 ranking regarding flight movements is the higher share of intercontinental flights and thus a higher average seat capacity per aircraft. As mentioned earlier, the average seat capacity per aircraft is lower at US airports, caused by the higher share of domestic flights operated with smaller aircraft.

Furthermore, the top 20 airports with respect to commercial passengers handled comprise four Asian airports (passenger figures in brackets): Beijing Capital International (65 million passengers), Tokyo International/Haneda (62 million passengers), Hong Kong International (45 million passengers) and Bangkok International (39 million passengers).

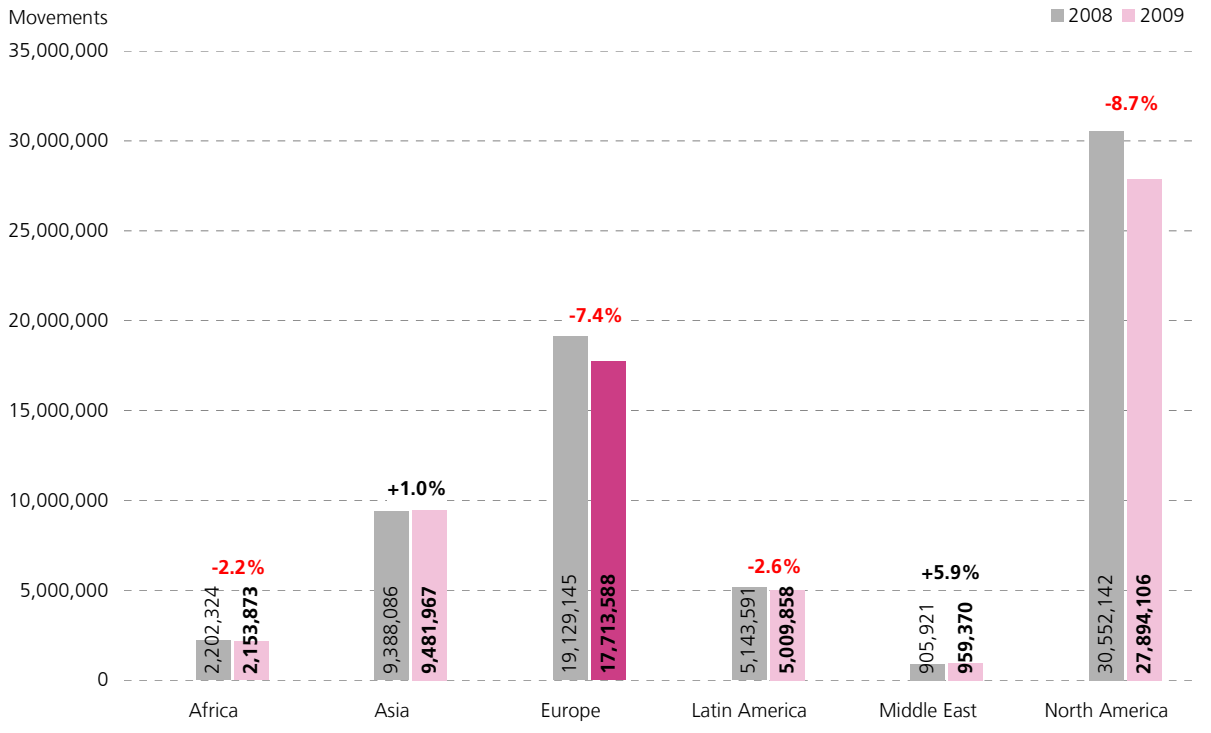
Figure 3-3 displays the top 20 European airports in terms of commercial passengers handled. Within Europe, concentration on the top 20 airports regarding passenger numbers is considerably higher than in the case of aircraft movements, one reason being the comparatively high share of intercontinental flights with larger aircraft and thus higher seat capacity per flight than e.g. in the USA. The number of passengers range from 66 million for London Heathrow to 18 million for Oslo. These are mostly European international hubs.

3.2 Aircraft Movements

Worldwide aircraft movements declined from December 2008 until November 2009 by 6.1% and thus declined even more strongly than passenger numbers over the same period. The average decline in the North America region amounts to 8.7%, whereas aircraft movements in the Middle East increased by 5.9%. The European region suffered nearly as much as North America under the financial crisis and the resulting economic downturn in terms of aircraft movements: Here, the decline amounts to 7.4%. Aircraft movements in the Asia-Pacific Region increased slightly (+1.0%) compared to the 12 months before. Therefore, the only world region with a large positive growth rate was again the Middle East.

Figure 3-4: Movements by region

Source: ACI, calculations by DLR



The two largest airports worldwide in terms of aircraft movements were Atlanta Hartsfield-Jackson with about 981,000 aircraft movements (-0.5%) and Chicago O'Hare with nearly 807,000 aircraft movements (-6.4%). Las Vegas shows the largest percentage decrease of

aircraft movements (-11.0%), whereas Beijing displays the largest increase with 13.2%. (However, at Beijing airport there is no distinction between commercial and non-commercial movements). With regard to commercial aircraft movements, the 20 largest airports worldwide were exclusively located either in North America (14) or in Europe (5), the only exception being Beijing airport in 7th place. The ranking in Figure 3-5 shows a large decline in the number of aircraft movements for the airport ranked second, Chicago O'Hare International, and for the third-ranked airport, Dallas/Fort Worth. The decline of aircraft movements from 2007 to 2008 at Dallas/Forth Worth results from counting non-commercial movements as being commercial. This was corrected in 2008 resulting in a large "decline" of commercial aircraft movements. The high number of US airports in the top ranking is largely attributable to the comparatively high utilisation of smaller aircraft at US airports for domestic air travel, resulting in a lower average seat capacity per aircraft compared to European or Asian airports.

Figure 3-5: The 20 largest airports in terms of flight movements worldwide

Source: ACI 2010, calculations by DLR

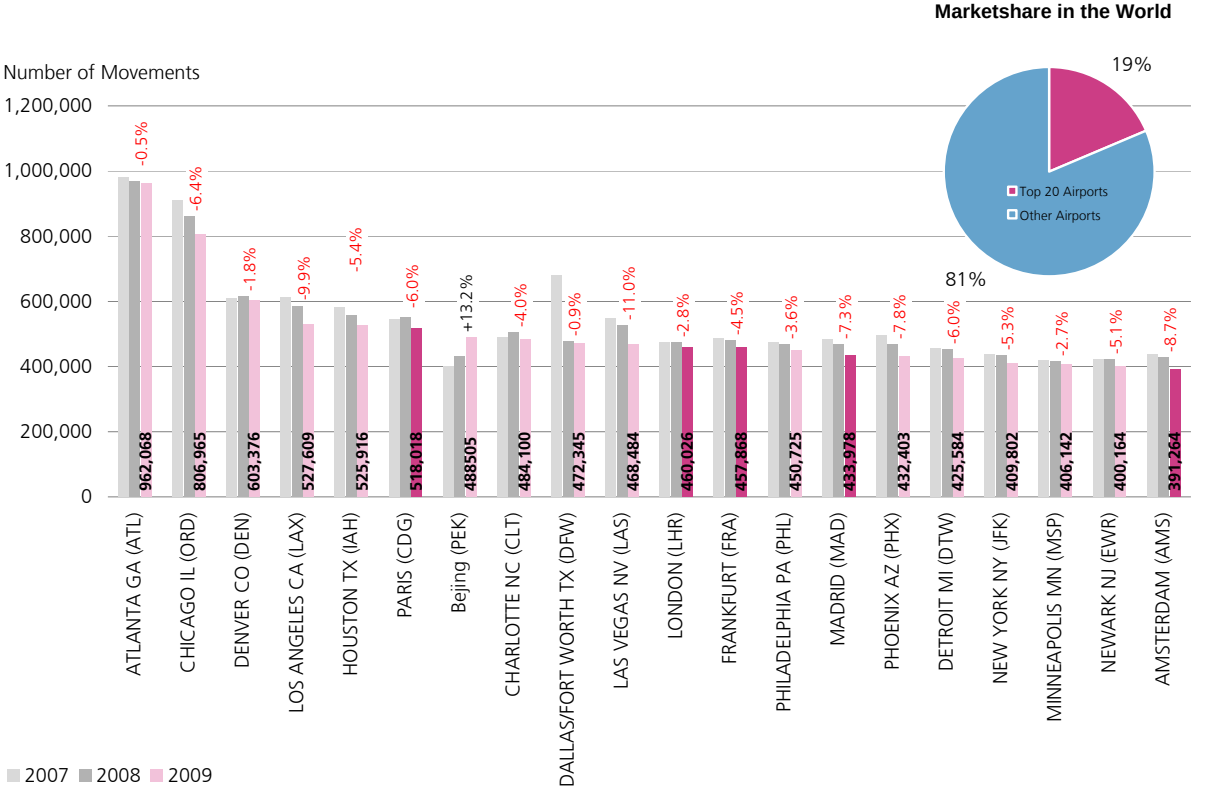
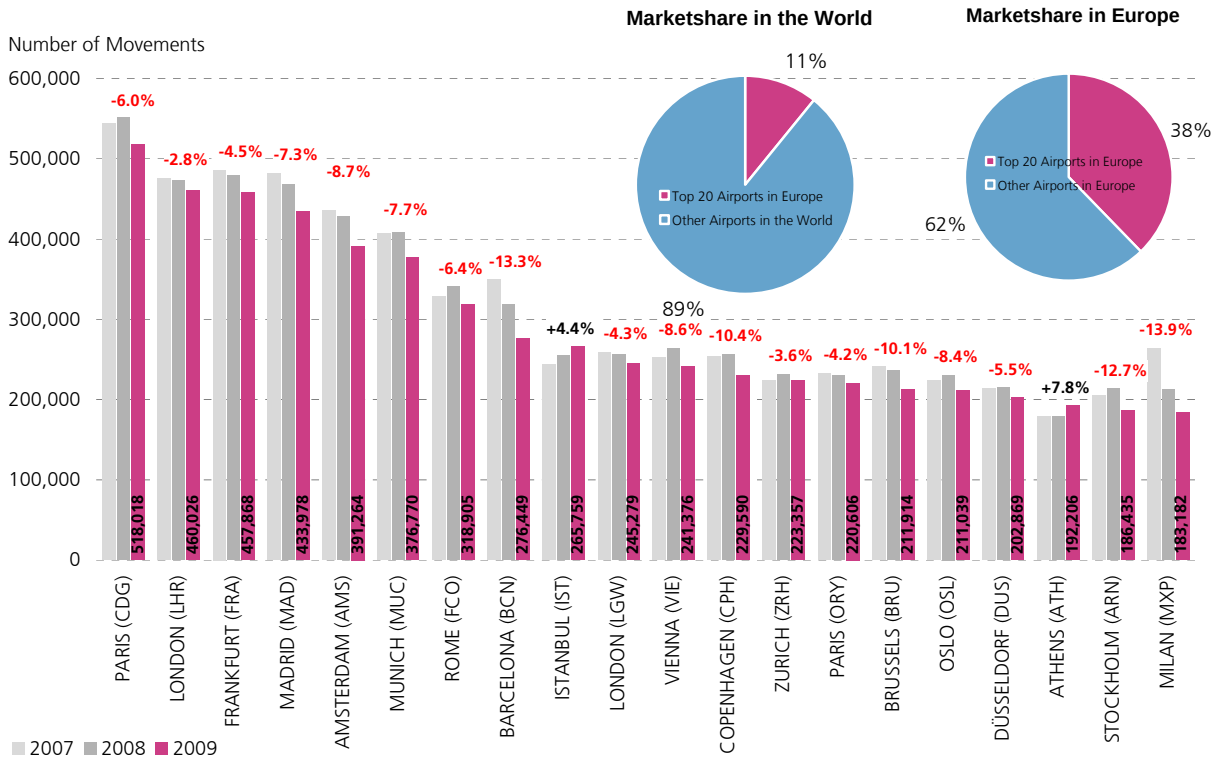


Figure 3-6: The 20 largest airports in terms of flight movements in Europe

Source: ACI 2010, calculations by DLR



The largest European airport in terms of aircraft movements was Paris Charles de Gaulle with around 518,000 aircraft movements (-6.0%) in 6th place, followed by London Heathrow in 11th place (460,000 aircraft movements, -2.8%). The European airports Frankfurt, Madrid Barajas and Amsterdam Schiphol follow in positions 12, 14 and 20 respectively. The number of aircraft movements at these airports varies between 518,000 for Paris Charles de Gaulle and 391,000 at Amsterdam Schiphol. A comparison of the Figures 3-6 and 3-7 reveals that airports which have a higher share of LCC operations performed better in terms of the growth rates of flight movements than airports with a higher share of FSNC. The increase of aircraft movements at Istanbul airport is attributable to the increase in operations of Turkish Airlines.

Figure 3-7 shows the top 25 low-cost airports in Europe in terms of aircraft departures per week, with the third week in July 2009 being the reference. London Stansted has the highest number of low-cost carrier take-offs of any airport in Europe. The number of low-cost carrier departures per week amounts to 1,484. The airports London Gatwick and Dublin follow in second and third place with 1,335 and 1,162 low-cost carrier take-offs respectively.

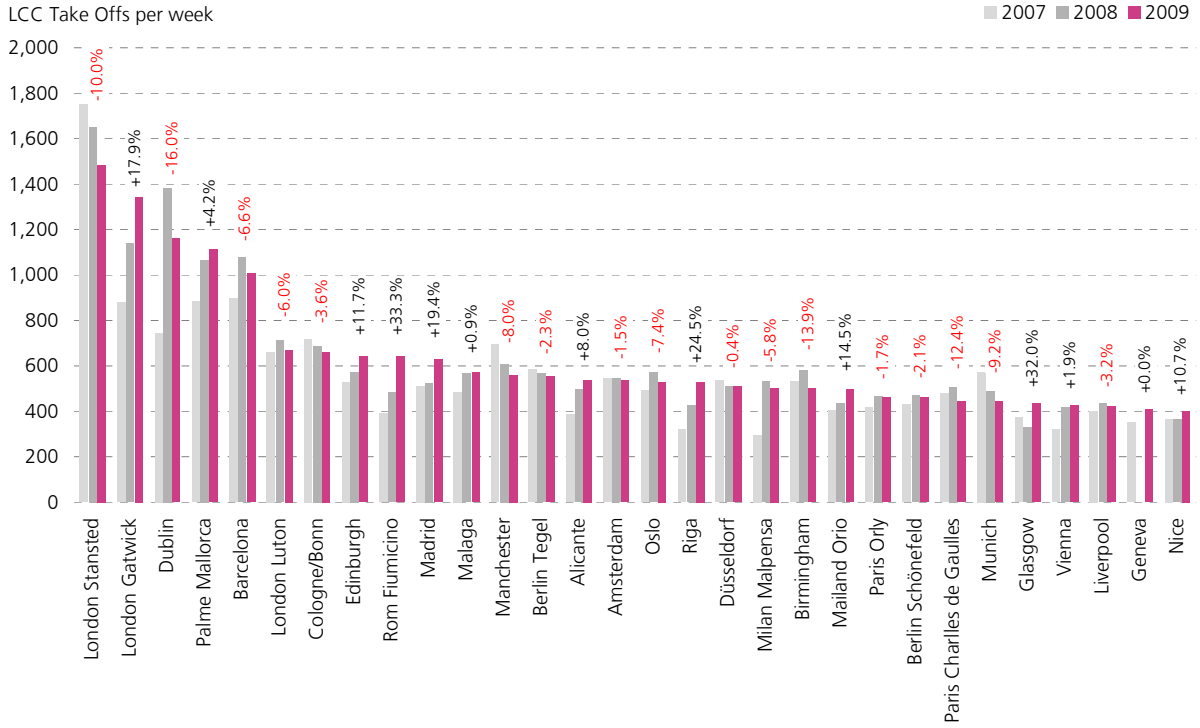
While low-cost carriers concentrate operations more at airports serving primarily point-to-point traffic, there are also some hub airports in Europe with a considerable amount of low-cost traffic, such as Paris Charles de Gaulle, Amsterdam and Munich airport. The weekly number of low-cost carrier take-offs varies roughly between 400 and 700. However, compared to the total

number of commercial aircraft movements, their share is still low. Altogether, four distinct categories of low-cost airports are identified:

- London Stansted, as a major low-cost offer airport, with the largest number of low-cost operations accounting for nearly all take-offs at the airport
- Small low-cost airports with about 500 weekly take-offs, having about 80% to 90% of low-cost carrier take-offs (e.g. Berlin Schoenefeld)
- Medium-sized airports with around 800 weekly low-cost take-offs, accounting for 27% to 67% of total take-offs (e.g. Barcelona)
- Hub airports with about 500 weekly low-cost carrier take-offs, having a share of about 10% to 30% of the total number of take-offs (e.g. Paris Charles de Gaulle)

Figure 3-7: Top 25 Low-cost carrier airports in Europe

Source: OAG 2009; third week in July 2009

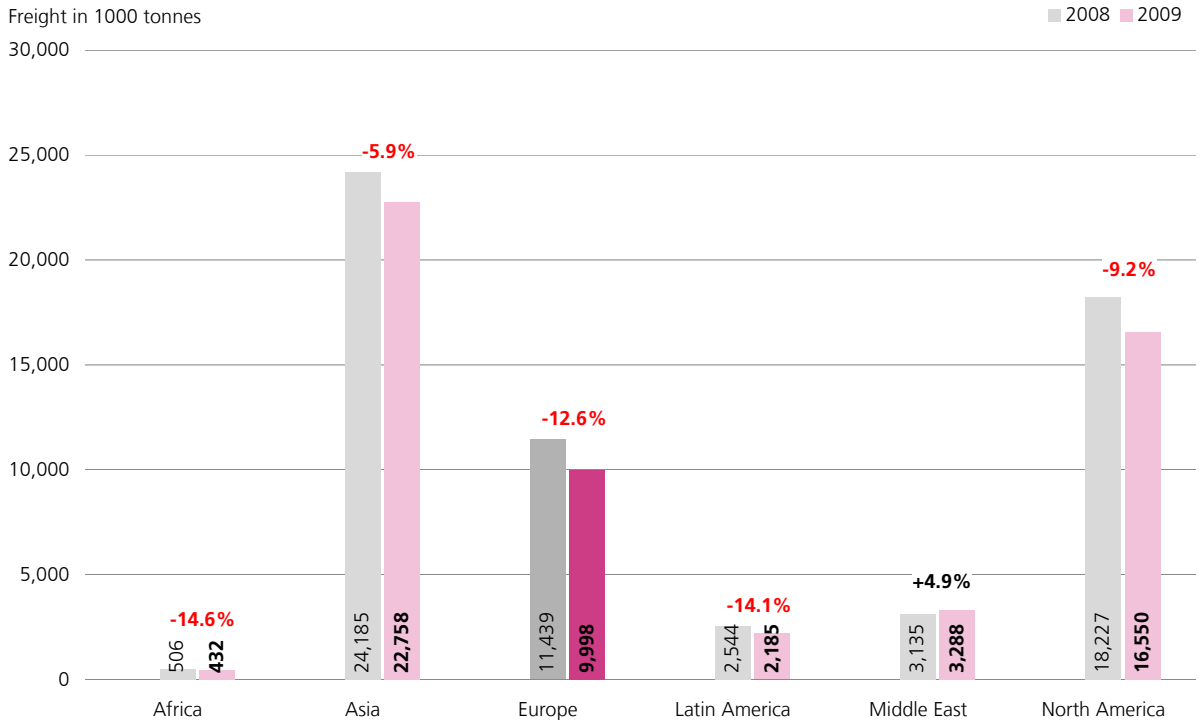


3.3 Freight

Freight comprises cargo carried by passenger aircraft as belly freight as well as by freighters. The total volume of freight handled (loaded and unloaded) at airports worldwide was 55 million tonnes in 2009 and thus represents a decline of 8.0%. Air cargo can be used as a barometer for the developments on the world's markets and thus directly suffered the effects of the economic downturn. The strongest decline occurred in the Latin American and African regions (-14.1% and -14.6% respectively), followed by Europe (-12.6%) and North America (-9.2%). Asia shows a decline of only 5.9%. The only region with a positive growth rate of freight handled is the Middle East with an increase of 4.9%.

Figure 3-8: Freight by region

Source: ACI[11], calculations by DLR

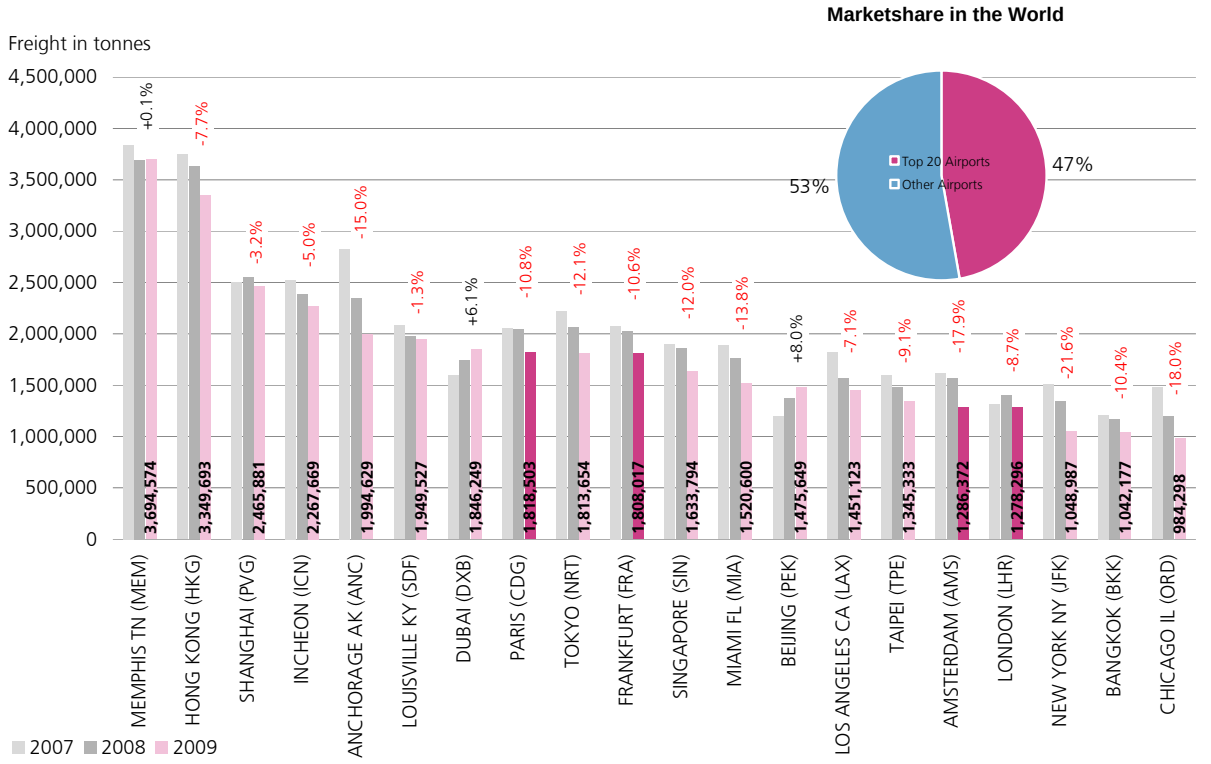


The top 20 freight airports worldwide as shown in Figure 3-9 are dominated mainly by Asian and US airports. Nine of these airports are located in Asia, seven in the USA and only four are EU airports. The world's largest freight airport is Memphis in the USA with 3.7 million tonnes of freight handled (+0.1%), closely followed by Hong Kong International (3.3 million tonnes of freight, -7.7%). There is a notable difference in the freight volume between the two largest airports and the 3rd largest airport, Shanghai Pudong International in China, which handled 2.5 million tonnes of freight (-3.2%). Total air freight figures range from 3.7 million tonnes at the airport of Memphis in the USA to 1.0 million tonnes at Chicago O'Hare. The largest European air freight airport is Paris Charles de Gaulle in place 8, followed by Frankfurt/Main in place 10. Amsterdam Schiphol and London Heathrow follow in places 16 and 17 respectively.

[11] ACI Freightflash

Figure 3-9: The 20 largest airports in terms of commercial air freight worldwide

Source: ACI 2010, calculations by DLR



As shown in the region overview, the strongest decline occurred in the Latin American and African regions (-14.1% and -14.6% respectively), followed by Europe (-12.6%) and North America (-9.2%). Asia shows a decline of only 5.9%. The only region with a positive growth rate of freight handled is the Middle East with an increase of 4.9%. Therefore, against the general tendency, the airports of Beijing and Dubai show a large increase of freight handled (+8.0% and 6.1%, respectively).

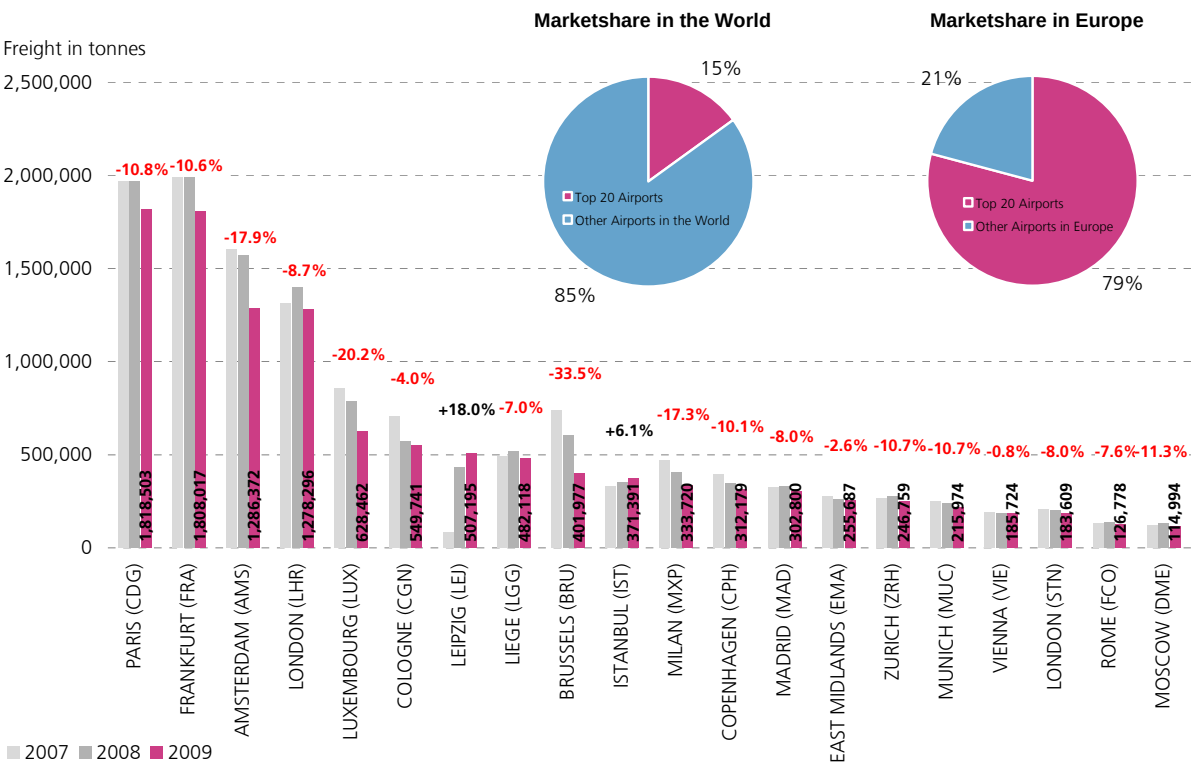
It is not surprising that all seven US airports in the top 20 ranking had to deal with significant losses (Anchorage; -15.0%) or stagnation, at best (Memphis) bitter volume losses. In the case of Anchorage, there is an overlapping of effects. One point is that the weakening economy directly affects the trade volume, but that also applies to many other airports. However, FedEx and UPS, two large integrators, operate transhipment centres at Anchorage and their business is strongly correlated to trade volume.

The largest freight airport in Europe is Paris Charles de Gaulle with 1.8 million tonnes of freight in 2009 (-10.8%), followed by Frankfurt/Main (-10.6%) with an almost equal amount of tonnes. Other large freight airports in Europe include Amsterdam Schiphol with 1.3 million tonnes of freight (-17.9%) in place 16 and London Heathrow with 1.3 million tonnes of freight (-8.7%) in

17th place. The large increase of freight handled at Leipzig (+18.0%) is due to the new DHL hub which has been has been moved from Brussels to this airport.

Figure 3-10: The 20 largest European airports in terms of commercial air freight

Source: ACI 2010, calculations by DLR



4 Air transport forecasts

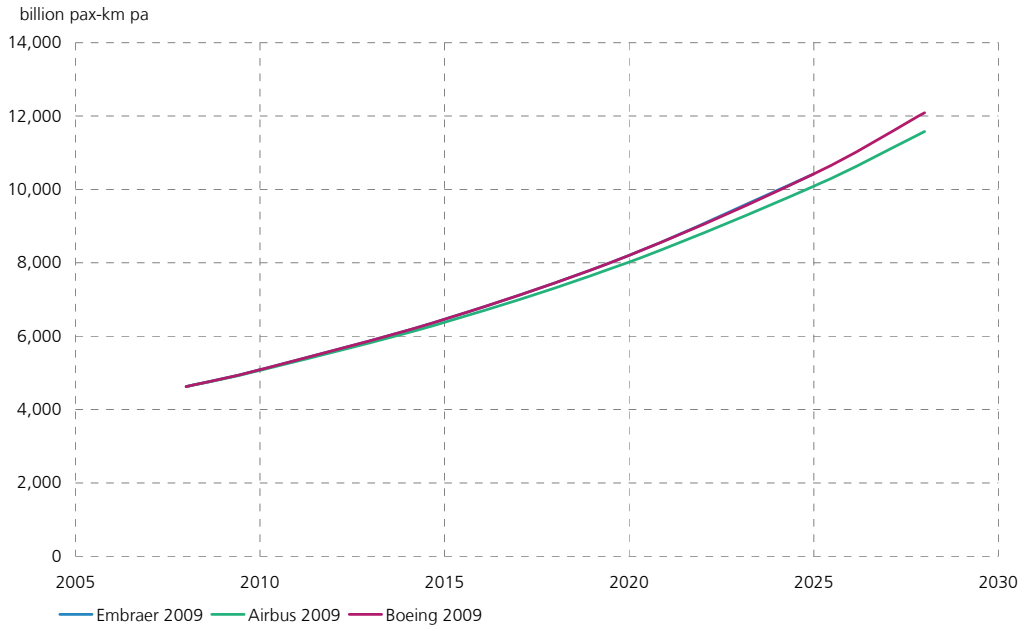
Statements on the future development of the air transport sector are required for various purposes, so aircraft manufacturers regularly publish forecasts to help estimate aircraft and component requirements for the forthcoming 20 years. Studies of the future development are also essential for strategic planning of the air traffic infrastructure (airports and air traffic control) and quantifying potential environmental impacts caused by air transport. In this chapter some selected, recently published forecasts for worldwide air traffic are presented in order to give an impression of the potential overall air traffic development. Short, medium, and long-term prognoses for European air traffic are also discussed. These forecasts are provided by the European organisation for the safety of air navigation, Eurocontrol.

4.1 Global forecasts

In 2009, long-term forecasts were published by the regional aircraft manufacturers Bombardier and Embraer and the engine manufacturer Rolls Royce, as well as the forecasts from the aircraft manufacturers Airbus and Boeing. The economic crisis, beginning in 2008, was partly mentioned in the forecasts; however, it generally had no effect on the results of the long-term analysis as economic cycles were considered to have been accounted for. As Airbus wrote in the Global Market Forecast 2009 – 2028: "The good news is that, despite bringing difficulties that can range from falling demand, load factors, yields and profitability, such cycles are generally relatively short-lived compared to the timescales considered for aircraft investment and fleet turnovers."

Figure 4-1: Comparison of current air transport forecasts on global scale

Source: Boeing, Airbus, Embraer 2009



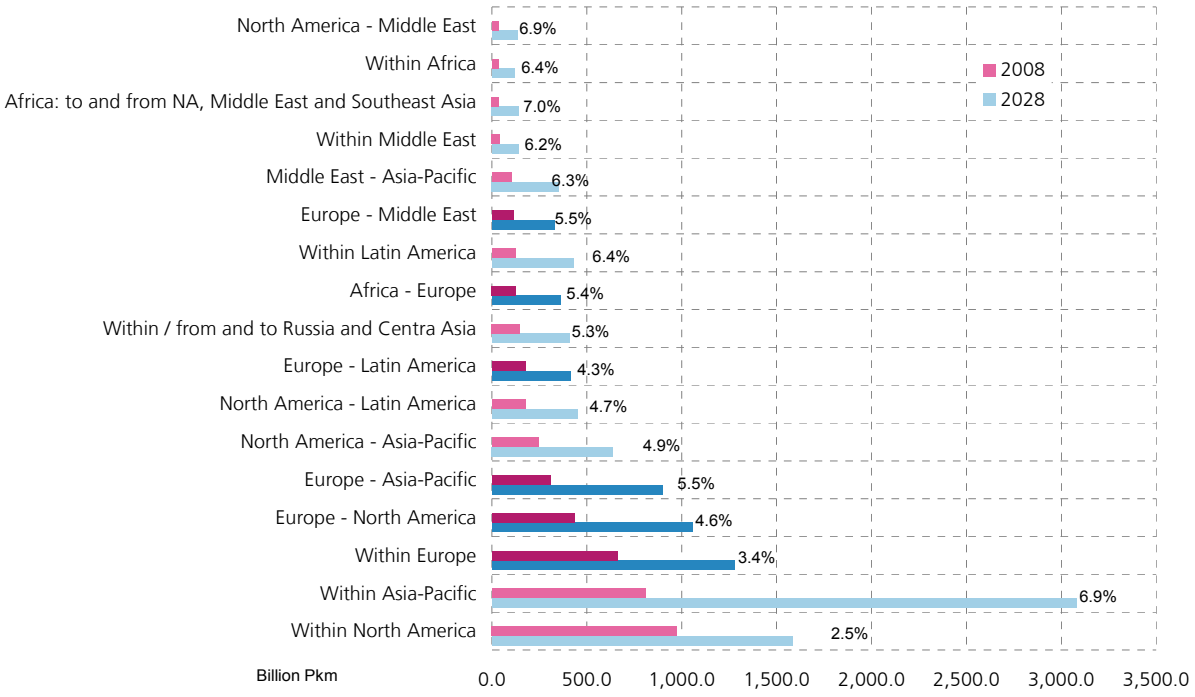
The great similarity in the expected PKM trends is noticeable when comparing the "manufacturer forecasts" (see Fig. 4-1). Starting from a comparable basis of 4,600 billion PKM in 2008, the average annual growth through to 2028 varies by only 0.2% between Boeing and Airbus. While Airbus assumes an average annual growth of 4.7% throughout the given period, Boeing assumes 4.9%. Embraer anticipates the same average growth as Boeing. While Bombardier makes no statement on the assumed global air traffic growth, Rolls Royce's forecast emphasises the similarity of the globally assumed growth rates among all manufacturers of approximately 5%. The assumed developments lead to around 12 billion PKM worldwide for all manufacturers in the target year. All manufacturers also forecast the world-regional trends in air traffic demand with similar figures.

The results for fleet development at Boeing and Airbus are not directly comparable due to differing fleet allocations. The requirement for aircraft for use in passenger air transport rises from around 18,800 aircraft in 2008 to over 35,000 aircraft in 2028 in the more up-to-date Boeing forecast. This represents a growth of around 1.9 times the current level. Boeing expects the number of aircraft in the 90 to 175 seat class (i.e. the B737 or A320 configuration) to double from today's 11,360 to over 24,000 aircraft. This aircraft category represents by far the largest segment of the worldwide aircraft fleet. Boeing even sees a growth of 2.5 times the current level for medium and long-haul aircraft with two aisles, rising from today's 3,510 aircraft to 8,000. There is a significant difference between the Airbus and Boeing forecasts for the demand for very large aircraft (i.e. the Airbus A380 and Boeing 747 models): Airbus forecasts a requirement of just under 1,300 aircraft for 2028 while Boeing only anticipates a requirement of around 1,000. Both companies assume an almost identical development in air traffic demand (i.e. transported passengers). The difference arises primarily through the fact that Boeing, in contrast to Airbus, anticipates a greater increase in direct flights between periphery airports, while Airbus assumes more growth in demand flows between the large hub airports, leading to a higher demand for very large aircraft.

Examination of the world-regional growth rates for the period 2008-2028 (see Fig. 4-3), as published in the Boeing forecast, clearly reveals that Boeing anticipates a high growth rate, particularly in the Asia region, during the forecast period. On the whole, the forecast values from Boeing have changed only marginally compared to the previous year; for China, a growth rate of 8.6% per year is expected. In contrast, the markets in North America and Europe, which experienced high growth rates in the past, fall heavily behind in terms of growth dynamic. Whilst Boeing still considers an average annual growth of 3.4% to be possible in Europe, the figure for North America is a mere 2.5%. The majority of the other regional markets demonstrates an annual growth around that of the global average of 5%.

Figure 4-3: Annual traffic growth on important world route groups

Source: Boeing 2009



4.2 European forecasts

Eurocontrol regularly publishes forecasts of flight movements to be expected in Europe. In the short-term prognosis, published half-yearly, the assumed number of flight movements in Europe is given for the forthcoming year. The medium-term forecast, published once per year, covers a time horizon of seven years. The long-term prognosis, the current edition of which was released in 2008, displays the conceivable modes of development by means of scenarios within a 20-year time frame. In the following, the most essential benchmarks of the two recently published prognosis series are presented.

4.2.1 Eurocontrol short-term forecast December 2009

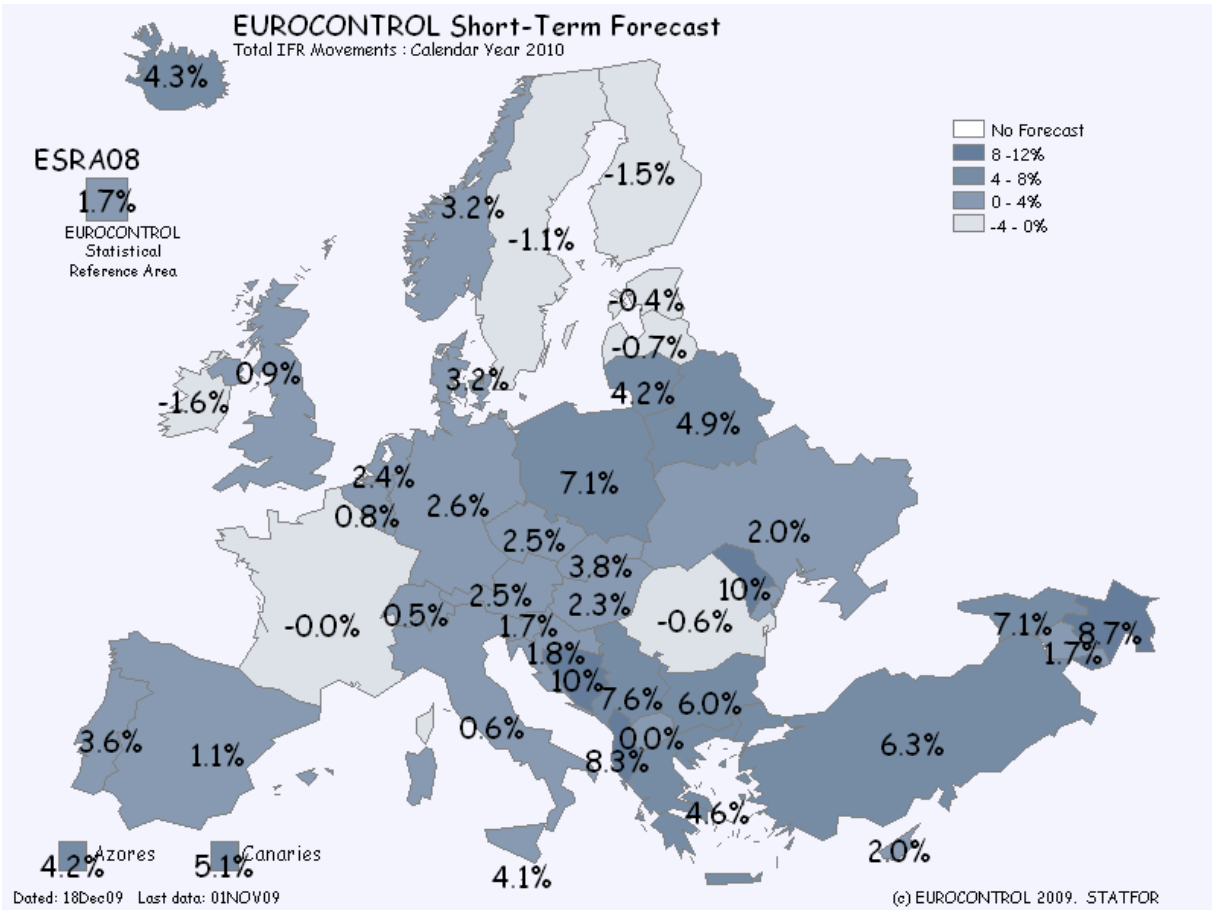
The short-term forecast, published in December 2009, gives an overview of the performed flight movements (according to IFR) in Europe (Eurocontrol ESRA) in 2009, and also of the potential flight movements in 2010. On the basis of this, a growth of between -2.8 and 6.3%, with a most likely case of 1.7% in total, was assumed for 2010. In 2009, a decline of 4.5% was seen compared to the preceding year. The observed decline in air transport movements corresponds to the global financial and economic crisis.

The expected growth differs considerably regionally, as already experienced in the past. In most countries, moderate growth in movement development is expected, with high rates in Bulgaria

(6.0%) and Poland (7.1%). However, in some European countries a negative growth in air transport movements is assumed, such as in Finland (-1.5%) and in Sweden (-1.1%).

Figure 4-1: Eurocontrol flight-forecast growth rates for 2010

Source: Eurocontrol 2009



4.2.2 Eurocontrol medium-term forecast 2009-2015

In the medium-term forecast, produced by Eurocontrol for the years 2009 to 2015, the development alternatives "high" and "low" have been defined, in addition to a "baseline" scenario. In December 2009, an update of the edition published in February 2009 was released to include the latest economic data and traffic trends. Eurocontrol assumes an average yearly growth of 2.0% in the Baseline scenario, 3.4% in the High scenario and 0.5% in the Low scenario for the entire forecast period. In the forecast year 2015, these growth rates would lead to 10.4 million IFR movements in the Low, 11.6 million in the Baseline, and 12.8 million IFR movements in the High scenarios. In the decade 2005 to 2015, the total number of IFR movements would increase by approximately 12.2% in the Low scenario, 25.8% in the Baseline scenario and 38.7% in the High scenario. This expected growth is lower than the expected 10-year growth before the economic crisis.

Table 4-1: Summary of the Eurocontrol medium-term forecast

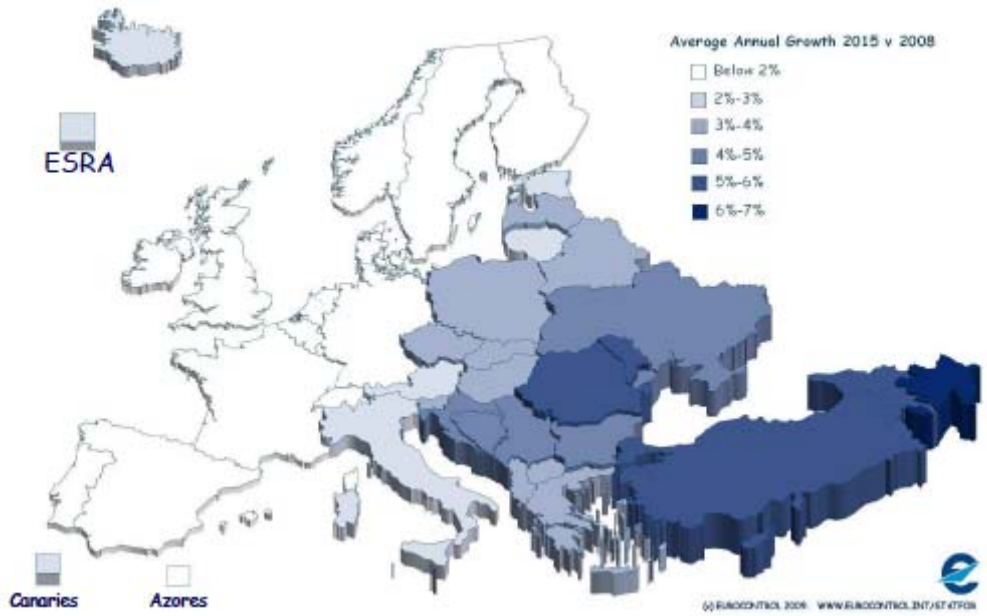
Source: Eurocontrol 2009

IFR Movements (Thousands)													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average Annual Growth Rate 2008-2015
High						9,564	10,085	10,613	11,195	11,679	12,219	12,783	3.4%
Baseline	8,876	9,218	9,561	10,043	10,083	9,446	9,634	9,979	10,454	10,837	11,219	11,596	2.0%
Low						9,303	9,094	9,282	9,620	9,883	10,168	10,438	0.5%

When considering the countries individually, the assumption of relatively high yearly growth rates in East Europe becomes apparent. This is probably due to the strongly-growing economies of these countries and their adaptation to the West European standard of living in terms of personal air travel. For the medium-term and beyond, Eurocontrol expects stagnating demand in most of the "old" EU Member States. A moderate increase in flight movements (between 2 and 3%) is only expected in Italy and Austria.

Figure 4-2: Average annual growth 2009-2015 for each state

Source: Eurocontrol 2009



5 Regulatory Developments

5.1 International Aviation

International air transport is governed by bilateral agreements between two countries. These air services agreements are negotiated by the governments and grant traffic rights as specific authorisations to use national air space, thereby restricting the number of airlines on the routes concerned, the number of flights and the possible destinations. Traditionally, these agreements were based on national ownership of the designated airlines.

In recent years, the EU has developed a new European external aviation policy which aims to bring these agreements in line with Community law. Furthermore, these measures will create new economic opportunities by opening new markets for competition and will ensure a level playing field by promoting regulatory convergence in key areas.

The EU external aviation policy is built on three pillars:

- amending all bilateral air services agreements between EU Member States and third countries that do not comply with the freedom of operation to ensure legal certainty. These "horizontal" aviation agreements do not replace the bilateral agreements already in place, but moreover bring them in line with EU law. Most importantly, they remove nationality restrictions in bilateral air services agreements, thereby allowing any EU airline company to operate flights between the partner country and any EU Member State in which it is established, in which a bilateral agreement already exists, and in which traffic rights are available. Agreements brought into compliance since 2003 are presented on the European Commission's website[12].

- create a common aviation area with neighbouring countries in the Mediterranean and to the east as a single aviation market with all its potentials and advantages, e.g. more traffic, better prices, more choice and stricter rules for, for instance, safety.

- conclude global agreements with key international partners to set up open aviation areas in order to boost competitiveness and quality of air transport, ensure high standards of safety and security and address the impact of aviation on the environment.

5.1.1 Horizontal Agreements

Horizontal agreements have been negotiated with around 45 countries worldwide. Nearly 900 bilateral air services agreements have already been modified by the joint efforts of the European

[12] http://ec.europa.eu/transport/air/international_aviation/doc/status_table.pdf

Commission and Member States to replace nationality rules with the principle of EU airline designation.

In 2009, the European Commission negotiated horizontal agreements with Brazil[13] (followed by an aviation safety agreement for expanding cooperation in all areas of safety), Indonesia[14], Peru[15] and Bangladesh[16]. Horizontal agreements with Azerbaijan[17], Mongolia[18], Pakistan[19] and the West African Economic and Monetary Union (UEMOA)[20] were signed in 2009.

5.1.2 Bilateral Agreements

Direct negotiations between each EU Member State concerned and its partner is another possibility for bringing existing bilateral air services agreements into compliance with Community law. Since 2004, Community designation has been amended in more than 130 separate air services agreements by EU Member States.

5.1.3 Common Aviation Area with the EU's Neighbours

In October 2009, delegations from the European Union and Georgia met for the first round of negotiations on a comprehensive aviation agreement[21]. The agreement will establish a Common Aviation Area between the EU and Georgia, which will remove market restrictions and integrate Georgia into the EU internal aviation market. The European Commission was provided with a mandate to negotiate a comprehensive aviation agreement with Georgia in June 2009, followed by its proposal to open negotiations at the beginning of that year[22]. The European Commission launched negotiations with Lebanon in 2009. Furthermore, negotiations achieved further progress with Israel, Jordan and Ukraine.

5.1.4 Global Agreements

Comprehensive air services agreements with key partner countries in the most dynamic world markets aim at a reciprocal opening of market access within a framework that ensures fair competition and high standards of safety, security and environmental protection. These open aviation areas will bring economic benefits to the air transport industry and the travelling public both within the EU and the key partners. They help to reform international civil aviation by establishing a modernised regulatory framework.

[13] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0411:FIN:EN:PDF
[14] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1236
[15] http://ec.europa.eu/transport/air/international_aviation/country_index/peru_en.htm
[16] http://ec.europa.eu/transport/air/international_aviation/country_index/bangladesh_en.htm
[17] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1091
[18] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/538
[19] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/309
[20] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1964
[21] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1437
[22] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/198

5.1.4.1 United States of America

At the end of March 2008, a new era in transatlantic aviation began when the EU/US air transport agreement took effect. The most ambitious air service agreement ever negotiated covers the largest international air transport market in the world (with some 50 million annual passengers between the EU and the US), but is only an important first step towards the normalisation of the international aviation industry. The ultimate objective of the European Union is to create a transatlantic Open Aviation Area: a single air transport market between the EU and the US with free flows of investment and no restrictions on air services, including access to the domestic markets of both parties.

According to Article 21 of the air transport agreement, second stage negotiations started in 2008 and were resumed in 2009. The delegations met in Brussels in June and November 2009[23] and in Washington in October 2009. Further negotiations will take place in 2010.

In 2009, progress was made across a range of important issues, including security, regulatory cooperation and the role of the joint committee. Further proposals on investment, environment, other commercial matters and the social dimension of the agreement will be discussed in 2010.

A second EU-US Aviation Forum on Liberalisation and Labour was held in June 2009[24].

Three meetings of the Joint Committee under the EU-US Air Transport Agreement took place in 2009, discussing many issues affecting EU-US air services, such as aviation security, environmental issues, consumer protection and various legislative initiatives on both sides of the Atlantic.

In December 2009, Iceland and Norway joined the EU-US Air Transport Agreement[25].

5.1.4.2 Canada

Within the framework of the EU-Canada summit in May 2009, both sides announced the EU-Canada air transport agreement and the EU-Canada air safety agreement.

The air transport agreement was negotiated by the European Commission under a mandate received from the Council in October 2007 and will replace the existing bilateral agreements concluded with Canada by Member States. It is the most ambitious agreement that has ever been concluded in the air transport sector as it includes all possible aspects of aviation and will begin a new era of transatlantic relations.

[23] See the Joint Statements from the European and the U.S. Delegations:
http://ec.europa.eu/transport/air/international_aviation/country_index/doc/20090626_joint_statement.pdf,
http://ec.europa.eu/transport/air/international_aviation/country_index/doc/2009_11_11_us_joint_statement.pdf

[24] http://ec.europa.eu/transport/air/events/2009_06_22_int_us_en.htm

This far-reaching agreement will improve connections between respective markets and citizens and will therefore generate major benefits for consumers, airlines and broader economies on both sides of the Atlantic. It will be a significant step in the opening of markets and investment opportunities, creating new opportunities in the airline sector through a gradual liberalisation of foreign ownership rules and investments. Other traffic rights will be liberalised gradually in parallel with the opening-up of investment opportunities.

The agreement includes a gradual phasing-in of traffic rights and investment opportunities. EU nationals will be able to establish operations in Canada and freely invest in Canadian airlines and vice versa. This aim will be achieved in the four following phases:

- All carriers of both parties are allowed to offer services between all points in the EU and all points in Canada, while all European airlines are recognised as Community carriers. All-cargo services can fly between the other party and a third country on services starting or ending in their home country (5th freedom rights). These traffic rights are granted without changes to the current system in which foreign ownership is limited to 25% in Canada.

- In the next phase of liberalisation, airlines obtain the right to convey passenger traffic between Member States and other members of the European Common Aviation Area as intermediate points on services starting or ending in their respective home country (intra-community 5th freedom rights). Furthermore, the right for cargo carriers to fly to third countries from the other party without connection to their home countries (7th freedom rights) is foreseen if ownership and control up to a total of 49% of the voting interests of the other party's airline is possible.

- In addition, the right to fly from the other party to a third country if the flight starts or ends in the home country (full 5th freedom rights) is granted if nationals of the other party are allowed to set up an airline in the territory of the other party (right of establishment).

- At the end of this liberalisation process, the agreement provides for full rights, including the right to fly between points in the territory of the other party (cabotage). These traffic rights are applicable if full ownership and control of existing airlines by nationals of the other party is possible.

Together with far-reaching cooperation in the field of safety, security, social matters, consumer interests, environment, air traffic management, state aids and competition, this agreement aims to finally establish a full Open Aviation Area between the EU and Canada.

[25] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1962

The EU-Canada Air Transport Agreement was signed on 17 December 2009.

The EU-Canada air safety agreement ensures mutual recognition of certifications and approvals concerning airworthiness of civil aeronautical products, services and manufacturing and maintenance facilities, as well as environmental testing of civil aeronautical products. It also contains a set of procedures and technical requirements, for example joint inspections, investigations, exchange of safety data, increased regulatory cooperation, consultations at technical level and the creation of a joint committee. Manufacturers and airlines will save costs and benefit from shorter and simpler approval procedures and reciprocal acceptance of certifications.

5.1.4.3 Africa

In 2009, several activities of the European Commission were related to the strengthening cooperation between Europe and Africa in the transport sector.

In April 2009, the European Union-Africa conference on air transport took place in Windhoek[26]. The European Commission and the African Union Commission agreed on an ambitious common strategic framework to develop safer and more sustainable air transport. This framework should contribute to boosting air transport in Africa, creating new opportunities between both continents, and marks the foundation of a new EU-Africa partnership in the field of aviation.

In June 2009, the European Commission published a Communication to reinforce the partnership between the European Union and Africa in the transport sector[27]. With regard to air transport, cooperation should be enhanced in the fields of air safety and security, economic regulation, air traffic management, navigation aids and environment.

In connection with this communication, the European Commission will be setting up an action plan with its African partners to discuss ways of improving and strengthening transport links between the two continents[28]. During the Euro-African Transport Forum that was held within the framework of the "TEN-T days" conference in October 2009, this already existing partnership on civil aviation between Europe and African countries was mentioned.

5.1.4.4 Japan

In January 2009, the European Commission and Japan agreed to a closer cooperation concerning the recognition of the European designation of carriers, security restrictions on liquids, air traffic management, and, in particular, the SESAR programme to strengthen their aviation relations[29].

[26] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/541
[27] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0301:FIN:EN:PDF
[28] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1560
[29] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/64

5.1.4.5 Australia

In June 2009, a second round of air transport negotiations was held between the EU and Australia. Negotiations will continue in 2010.

5.1.5 International Cooperation

In April 2009, the Council decided on the accession of the European Community to the Convention on international interests in mobile equipment and its Protocol on matters specific to aircraft equipment (Cape Town Convention)[30].

5.2 Competition

5.2.1 State aid

In 2005, the European Commission adopted a Communication concerning guidelines on financing airports and start-up aid for new routes from regional airports[31]. These rules ensure that a level playing field exists as between Community carriers in the liberalised air transport sector. In fulfilment of point 86 of the guideline, during 2009 the European Commission began the work necessary to undertake a detailed assessment of the application of the guidelines.

In application of these rules, the Directorate-General Mobility and Transport proposed several European Commission state aid decisions in 2009[32]:

The European Commission declared as compatible with Community law state aid granted to airports in Lithuania (Vilnius, Kaunas and Palanga), the United Kingdom (revised development plan for Newquay Cornwall Airport and cost overruns at City of Derry Airport), Italy (Falconara regional airport and five regional airports in Tuscany), Germany (Berlin Brandenburg International, Münster/Osnabrück, Kassel-Calden, Dresden, Halle/Leipzig), Czech Republic (Ostrava), Belgium (Ostend-Bruges), the Netherlands (Groningen), Hungary and Poland (Rzeszów Jasionka as well as state aid arrangements notified by the Polish authorities for ten small airports and for future Polish airports as well as eight airports as part of the trans-European transport network).

For years, the European Commission has been investigating state aid granted by Greece to Olympic Airlines and Olympic Airways.

In March 2009, the European Commission decided that modifications to the process for the sale of certain assets of Olympic Airlines/Olympic Airways Services as approved by the European

[30] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:121:0003:0007:EN:PDF
[31] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2005:312:0001:0014:EN:PDF
[32] http://ec.europa.eu/transport/stateaid/decisions_en.htm

Commission decision of September 2008 did not raise state aid concerns[33]. Due to the financial and economic crisis, the tender process was not successful and the Greek authorities wished to have the possibility of modifying the sales process to allow for the direct sale of the assets by negotiation with interested parties.

In July 2009, the ECJ ruled that Greece had continuously failed to fulfil its obligations in order to recover aid incompatible with the Treaty granted to Olympic Airways[34]. Although parts of the illegal state aid were off-set against Olympic's damages for losses, a further part remained outstanding. The Court therefore decided that an order imposing a fine on Greece would constitute an appropriate financial means of inducing Greece to take the measures necessary to put an end to the established infringement and to ensure full compliance in the recovery of state aid. The sum of EUR 2 million was paid by Greece as a fine.

In October 2009, the European Commission authorised state aid covering parts of the high costs for the voluntary redundancy scheme of Olympic Catering SA[35]. Following the sale of Olympic Airlines, Olympic Catering needed to reduce its workforce but was legally unable to do so due to the job security and salary arrangements of a group of personnel, negotiated when Olympic Catering was a state-owned entity. The Greek authorities proposed to pay for part of the costs of an early retirement / voluntary redundancy scheme. As this aid measure pursued an objective of common interest in a necessary and proportionate manner without adversely affecting trading conditions, the European Commission found it to be compatible with the common market.

In January 2009, the European Commission raised no objections to the abolition of an existing aid scheme at airports in France[36]. It accepted appropriate measures to end differentiation in airport charges between domestic flights and flights from/to countries in the Schengen area. These rules, which might distort competition and affect trade, do not apply for French airports since the first half of 2008 and for Paris airports since 1 April 2009.

In January 2009, the European Commission authorised a guarantee on a loan worth € 200 million for rescue aid for Austrian Airlines which complied with the applicable provisions of the Community framework for rescue and restructuring of firms in difficulty[37]. This rescue aid helped to keep the company operating until the European Commission was able to take a position on a further issue involving possible state aid linked to privatisation of the company.

Following this short-term measure to tackle liquidity problems which Austrian Airlines encountered as a result of the financial crisis, Austrian Airlines was sold to Lufthansa. In February

[33] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/374
[34] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62007J0369:EN:HTML
[35] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1509
[36] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:083:0016:0016:EN:PDF
[37] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/74

2009[38], the European Commission opened the formal investigation procedure regarding the sale at a negative price and the Austrian Government's plans for the restructuring of the company. In August 2009, this investigation was closed, concluding that whilst the price paid does involve state aid, such aid is nevertheless compatible with the Community framework for the rescue and restructuring of firms in difficulty[39].

5.2.2 Mergers

In 2009, the consolidation process within the airline sector continued. Due to the EU Merger Regulation[40], the European Commission appraises such concentrations and declares them compatible with the Common Market or not.

While the European Commission approved Lufthansa's proposed takeover of BMI British Midland without conditions[41], the transaction of Iberia with Vueling and Clickair[42], as well as Lufthansa's acquisitions of SN Airholding (Brussels Airlines)[43] and Austrian Airlines[44] were authorised subject to conditions. Parallel to the clearance of Lufthansa's takeover of Austrian under the merger control regulation, the European Commission also approved the restructuring aid to Austrian Airlines under the EC Treaty state aid rules as already mentioned above.

Among other remedies, the carriers in all cases were committed to safeguard competition and passenger choice and therefore to give up slots at several airports in order to attract competing airlines to enter or expand in these markets.

In January 2009, the European Commission received notification of a proposed concentration due to Ryanair's public bid for Aer Lingus[45]. Within the same month, the notification was withdrawn.

In November 2009, British Airways and Iberia agreed on a binding memorandum of understanding in order to set out the basis for a proposed merger of the two companies.

In the field of airports, in November 2009[46] the European Commission approved the acquisition of Gatwick Airport by a private equity fund whose portfolio also includes interests in London City Airport. The proposed acquisition of joint control over Bristol Airport by OTTP, also engaged

[38] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/248
[39] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:059:0001:0038:EN:PDF
[40] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:024:0001:0022:EN:PDF
[41] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/789
[42] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/29
[43] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/974
[44] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1255
[45] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:014:0010:0010:EN:PDF
[46] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1825

with a stake in Birmingham International Airport, and the Macquarie Group was also approved by the European Commission in December 2009[47].

5.2.3 Antitrust

Concerning antitrust legislation, Council Regulation (EC) No 487/2009 on the application of Article 81(3) of the Treaty to certain categories of agreements and concerted practices in the air transport sector was published in the Official Journal[48]. In the interests of clarity and rationality, an older Council Regulation with its amendments has been codified.

In April 2009, the European Commission opened two formal antitrust proceedings against certain members of Star (Lufthansa, Air Canada, Continental and United) and oneworld (British Airways, Iberia, American Airlines) airline alliances[49]. Due to the members' tight cooperation regarding marketing, pricing, capacity and schedules, as well as revenue sharing on transatlantic routes, the proceedings cover both existing and planned cooperation between the carriers as well as their compatibility with European rules on restrictive business practices. There is no strict deadline for the European Commission to complete enquiries into potentially anticompetitive conduct.

Within the procedure concerning oneworld airline alliance, the European Commission sent a Statement of Objections as a formal step in September 2009 and the parties replied in December 2009. British Airways, American Airlines and Iberia offered commitments in order to alleviate the European Commission's concerns. This proposal requires further investigation before the European Commission reaches any conclusion as to the next steps.

It must be mentioned, that the European Commission has also been investigating the proposed cooperation between SkyTeam members (Air France-KLM, Alitalia, CSA Czech Airlines, Delta, Aeromexico and Korean Air) since 2007.

5.2.4 Infringements

Under the Treaties, the European Commission is responsible for ensuring that Community law is correctly applied. As the Guardian of the Treaties, the European Commission has the option of commencing infringement proceedings whenever it considers that a Member State has breached Community law. In 2009, the European Commission was concerned with several infringement proceedings in the field of air transport:

[47] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1910
[48] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:148:0001:0004:EN:PDF
[49] http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/09/168

In January 2009, the European Commission sent a reasoned opinion as the second stage of the infringement procedure to Germany due to non-recognition of a type-certificate issued by the European Aviation Safety Agency (EASA) [50].

A reasoned opinion was also sent to Italy and Luxembourg for failure to notify the measures implementing the Directive on the safety of third-country aircraft using Community airports in April 2009[51].

In October 2009, the European Commission took Greece to the European Court of Justice for failing to establish effective and independent oversight authorities within the context of the Single European Sky legislation which entered into force in April 2004[52]. The Greek legal implementation cannot guarantee effective and independent oversight of air navigation services which ensure the safety of operations.

In the field of the groundhandling market at Community airports, the European Commission reminded the Hungarian authorities of the need to comply with their obligations under Directive 96/67/EC[53]. It also sent a reasoned opinion as the second stage of the infringement procedure to Poland in March 2009[54] and to Latvia in October 2009[55]. The Member State did not notify any transposition of the directive on market opening for groundhandling services.

In November 2009, the European Commission took further action against four Member States which have not or not sufficiently notified their measures for the transposition of the Directive on the Community air traffic controller licence[56]. In order to ensure high levels of responsibility and competence among air traffic controllers, as well as to enable mutual recognition of licences, the European Commission sent reasoned opinions to Luxembourg, Greece, the Czech Republic and Finland.

A table of on-going infringement procedures for non-communication of national transposition measures is presented on the European Commission's website[57].

5.3 Distribution Networks (CRS)

Computerised Reservation Systems (CRS), also known as global distribution systems (GDS), are distribution networks in the air transport market. These systems act as technical intermediaries between the airlines and the travel agents and are used by travel agents to find up-to-date

[50] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/177&language=en
[51] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/577&language=en
[52] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1440&language=en
[53] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1442&language=en
[54] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/457
[55] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1443&language=en
[56] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1777&language=en
[57] http://ec.europa.eu/transport/infringements/directives/doc/infringements_transport.pdf

information on flights and their availability, to compare prices and to make immediate confirmed reservations on behalf of the consumer.

As these distribution channels might influence the consumer choice, an EU Code of Conduct for computerised reservation systems was established in 1989. At that time, the vast majority of airline bookings were made through CRS and most of the CRS were owned and controlled by airlines. The regulation ensured that air services by all airlines were displayed in a non-discriminatory way on the travel agencies' computer screens.

Given the significant market and technical developments, such as the rise of alternative booking channels via airlines' websites or their call centres, the Code of Conduct needed to be adapted to the current market conditions.

In March 2009 Regulation (EC) No 80/2009[58], introducing a revised code of conduct for computerised reservation systems, entered into force.

The Regulation contains substantial simplification of the legislative framework by giving more flexibility to system vendors and air carriers, but it also maintains certain provisions on CRS to prevent abuse of competition and to ensure the supply of neutral information to consumers. In order to secure transparent and comparable terms of competition in the market, parent carriers (operator participating in a system vendor) should be subject to specific rules. Therefore, an explanatory note with regard to the definition of a "parent carrier" has been published[59]. This note aims to clarify to market participants the meaning of the new definition and to indicate how the European Commission services would determine the status of an air carrier with respect to this definition.

5.4 SES II

The reform of the European air traffic control system aims to meet the challenge of large increases in air traffic expected in the coming years. It also aims to increase safety and reduce costs, delays and the impact of air traffic on the environment.

As a consequence, the European Commission considers it necessary to amend the four regulations (549/2004, 550/2004, 551/2004 and 552/2004) on the Single Sky to improve aviation performance, to adapt the legislation to changes which have arisen over the last few years and to succeed in creating a unified air space, a truly "Single" Sky.

In November 2009 Regulation (EC) No 1070/2009, amending Regulations (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004 and (EC) No 552/2004 in order to improve the

[58] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:035:0047:0055:EN:PDF
[59] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:053:0004:0006:EN:PDF

performance and sustainability of the European aviation system, was published in the Official Journal of the European Union[60].

The general framework of the Single European Sky needs to be completed with more specific and detailed implementing rules. In order to support the European Commission in the implementation of the SES, the current legislation established the Single European Sky committee (SSC), representing both civil and military interests of the Member States, observers from third countries and EUROCONTROL. This committee gives its agreement on the draft implementing rules or community specifications that have been drafted by the mandated organisations before the European Commission adopts these and is therefore involved in the regulatory procedure. In 2009, the European Commission has adopted the following implementing rules with the assistance and positive opinion of the Single Sky Committee (SSC)[61]:

Commission Regulation (EC) No 262/2009 of 30 March 2009 laying down requirements for the coordinated allocation and use of Mode S interrogator codes for the Single European Sky[62],

Commission Regulation (EC) No 30/2009 of 16 January 2009 amending Regulation (EC) No 1032/2006 as far as the requirements for automatic systems for the exchange of flight data supporting data link services are concerned[63] and

Commission Regulation (EC) No 29/2009 of 16 January 2009 laying down requirements on data link services for the Single European Sky[64].

Furthermore, the European Commission communications concerning the implementation of Article 4 of Regulation (EC) No 552/2004 on the interoperability of the European Air Traffic Management network[65] were published.

In 2009, the European Commission published a collection of National Supervisory Authorities within the context of the Single European Sky[66]. These Authorities ensure the supervision of the regulatory framework in all Member States. They are, in particular, responsible for certifying and overseeing air navigation service providers.

[60] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:300:0034:0050:EN:PDF
[61] http://ec.europa.eu/transport/air/single_european_sky/comity_en.htm
[62] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:084:0020:0032:EN:PDF
[63] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:013:0020:0022:EN:PDF
[64] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:013:0003:0019:EN:PDF
[65] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:323:0024:0024:EN:PDF and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:196:0005:0005:EN:PDF
[66] http://ec.europa.eu/transport/air/single_european_sky/doc/nsa_2009_10_nsa_overview.pdf

The European Commission also publishes Member States' annual reports on the implementation of the Single European Sky and the Flexible Use of Airspace (FUA)[67].

In November 2009, the European Commission decided to send reasoned opinions to Luxembourg, Greece, the Czech Republic and Finland as the second stage of the infringement procedure launched in response to the non-notified or only partially notified transposition into national law of Directive 2006/23/EC on the Community air traffic controller licence within the time limits specified[68].

As the aim of the directive is to ensure high levels of responsibility and competence among air traffic controllers while also enabling mutual recognition of licences and therefore to improve the overall safety of air traffic in the Single European Sky, the four Member States have two months in which to reply, failing which the European Commission advances to the next stage of the infringement procedure.

SESAR

In March 2009, the European Council adopted a Decision through which the SESAR ATM Master Plan has been endorsed as the initial version of the European ATM Master Plan[69]. This Decision is complemented by a Resolution focusing on critical aspects of the Master Plan's contents, maintenance process and early execution.

The present document is the Edition 1 of the European ATM Master Plan resulting from the Council's Decision.

According to the Council's Resolution, the first update of the European ATM Master Plan is expected to be endorsed by the Administrative Board of the SESAR Joint Undertaking before March 2010.

5.5 Airports

5.5.1 Airport charges

In March 2009, Directive 2009/12/EC on airport charges was published in the Official Journal[70]. The new legislation sets common principles for the levying of airport charges at Community airports and covers any airport located in a territory subject to the Treaty and open to commercial traffic whose annual traffic is over five million passenger movements and to the airport with the highest passenger movement in each Member State. It promotes better

[67] http://ec.europa.eu/transport/air/single_european_sky/ms_reports/ms_reports_1_en.htm
[68] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1777
[69] http://ec.europa.eu/transport/air/single_european_sky/doc/european_atm_master_plan.pdf
[70] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:070:0011:0016:EN:PDF

dialogue between airports and airlines as airport users. It ensures transparency, non-discrimination and appropriate consultation between airlines and airports under an independent regulator in each Member State.

Member States are obliged to transpose this Directive by 15th March 2011 and inform the European Commission forthwith thereof.

5.5.2 Airport slots

At the end of June 2009, Regulation (EC) No 545/2009 on common rules for the allocation of slots at Community airports entered into force in order to ensure that the non-utilisation of slots allocated for the summer 2009 scheduling period does not cause air carriers to lose their entitlement to those slots. Due to the negative effects of the global economic and financial crisis for air carriers, this temporary measure will help airlines cut costs by allowing them to cut capacity more easily at busy airports, knowing that their slots will be safeguarded for the next summer season 2010.

In order to react to further effects of the crisis, the European Commission shall continue to analyse the impact of the economic crisis on the air transport sector. Should the economic situation continue to deteriorate prior to the winter 2009/2010 scheduling period, the European Commission could make a proposal to renew the arrangements contained in this Regulation for the winter 2010/2011 scheduling period. Such a proposal should be preceded by a full impact assessment.

In November 2009, the European Commission published a proposal for a Regulation on common rules for the allocation of slots at Community airports[71]. In order to simplify and clarify Community law, this codification shall supersede the various acts incorporated in Council Regulation (EEC) No 95/93 by bringing them together with only such formal amendments as are required and will fully preserve the already established content.

5.6 Civil Aviation Accident Investigation

Although aviation is one of the safest forms of transport, in October 2009[72] the European Commission proposed a Regulation on investigation and prevention of accidents and incidents in civil aviation. Due to air traffic increase, a much more complex organisation of the air transport sector, adoption of European aviation safety rules and the establishment of EASA, the proposal aims to update the current rules in order to improve transport safety and to reflect the current realities of Europe's aviation market as well as the complexity of the global aviation industry.

[71] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0634:FIN:EN:PDF
[72] http://ec.europa.eu/transport/air/safety/doc/com_2009_611_en.pdf

Expected benefits are a high level of quality, uniformity and independence of safety investigations in the Community which prevent the reoccurrence of the same type of accident or serious incident. The proposal defines and clarifies the participation rights of EASA in accident investigations without affecting the independence of investigations and improves the implementation of safety recommendations. It stipulates the establishment of a European Network of Civil Aviation Safety Investigation Authorities as an independent platform for cooperation between the national safety investigation authorities, the European Commission and EASA in order to implement a number of central functions, such as coordinating training activities or sharing investigation resources available in the EU. Furthermore, the proposal grants better protection of the rights of the victims of air accidents in the form of rapid and organised assistance in the case of an accident and the right to reliable information concerning the progress of an ongoing investigation, as well as improved protection of sensitive safety information and its sources.

The proposal backs the voluntary cooperation by a legal mandate and builds on the provisions of Council Directive 94/56/EC[73] and Annex 13 to the Chicago Convention.

5.7 Unmanned aircraft systems (UAS)

Aviation has been mainly developed within the concept of aircraft operated by an on-board pilot. The evolution of technology in recent years in the aerospace sector is now providing all the necessary technical tools to make the insertion of unmanned aircraft into the airspace a reality. The unmanned aircraft is therefore becoming a new paradigm for aviation, creating new potential usage (ranging from commercial services to security and defence missions.), but requiring an adaptation of the approach applied to manned aircraft.

In 2009, the European Commission organised a hearing on Light UAS[74] which have a maximum take-off mass of less than 150 kilograms. The main objectives of this event were to understand the current European Light UAS industrial base and the current Light UAS applications in Europe, to identify potential obstacles, enablers and best practices in Europe and to directly exchange community views with the European Light UAS.

5.8 Studies carried out in 2009

During the year 2009, the European Commission was engaged in several studies concerning the future of transport and, as part of this sector, of aviation as well. As a follow-up to the 2001 White Paper, which set an agenda for the European transport policy throughout 2010, these studies prepare the ground for later policy development, which can only be determined by looking further ahead and defining a long-term vision for the future of transport and mobility.

[73] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31994L0056:EN:HTML
[74] http://ec.europa.eu/transport/air/doc/2009_10_08_hearing_uas.pdf

In March 2009, a report on transport scenarios with a 20 and 40 year horizon was published[75]. It provides technical support for a debate on future transport scenarios. In August 2009, a study evaluated the Common Transport Policy (CTP) of the EU from 2000 to 2008, with the aviation sector being part of this policy area[76]. The analysis has been grouped around economic, social and environmental aspects of the CTP as the key policy objectives. In February 2009, the Focus Groups' Report on the future of transport was released[77]. The participants summarized their findings in this report which aims to provide an input into the European Commission's Communication on the Future of Transport. This document identifies seven factors – that influence transport demand or supply – as the most basic drivers of future transport activity: ageing, migration and internal mobility, urbanisation, regional integration, globalisation, climate change, and technology, in particular energy and information technologies.

In June 2009, a study analysing "Effects of EU Liberalisation on Air Transport Employment and Working Conditions" was published[78]. Since the aviation sector was finally liberalised in 1997, the study also looks into the impact of the enlargement of the Community and concludes that direct employment in the EU's air transport sector in 2007 numbered at least 676,000 persons.

In March 2009, a report concerning the climate impact of aviation NOx emission and policies to reduce it was published[79]. While LTO NOx emissions are controlled, this report sets out to design and evaluate policy instruments that address the climate impact of aviation NOx emissions at cruise altitudes which cause a significant part of the current total climate impact of aviation. It concludes that it will take around three to five years to provide robust scientific input for potential policy instruments that are both well-founded in scientific evidence and provide the right incentives to reduce emissions, both in the short-term and in the long-term.

In March 2009, the European Commission presented a report on consumer protection against aviation bankruptcy[80]. The study differentiates between the flight-only services typically sold by scheduled airlines and package travel sold by travel agents/tour operators. It also focuses on significant changes in the markets influenced by modern distribution methods (e.g. internet sales) which have led to the phenomenon of so-called "selfpackaging", while the use of travel agents has decreased. As regards consumer protection in the case of airline bankruptcy, the

75 http://ec.europa.eu/transport/strategies/studies/doc/future_of_transport/2009_02_transvisions_report.pdf

76 http://ec.europa.eu/transport/strategies/studies/doc/future_of_transport/20090908_common_transport_policy_final_report.pdf

77 http://ec.europa.eu/transport/strategies/studies/doc/future_of_transport/2009_the_future_of_transport.pdf

78 http://ec.europa.eu/transport/air/studies/doc/internal_market/2009_effects_of_eu_liberalisation_on_air_transport_employment_and_working_conditions.pdf

79 http://ec.europa.eu/transport/air/studies/doc/environment/oct_2008_nox_final_report.pdf

80 http://ec.europa.eu/transport/air/studies/doc/internal_market/2009_01_bankruptcy_study.pdf

report concludes that a combination of measures within the framework of a general responsibility of governments, industry and the courts is essential in order to create and provide rapid ad hoc responses if and when emergency conditions arise, as well as ensuring fairness in the treatment of all damaged persons and bodies.

In February 2009, a study described the impact of Directive 96/67/EC on groundhandling services in the years 1996-2007[81], especially noting the entrance of the New Member States into the EU, and its impact on the European air transport market. In preparation for a possible revision of the Directive, the report shows different types of liberalisation in a very dynamic phase of development and growth in groundhandling markets. The study gives differentiated views on competition in the field of baggage handling, freight and mail handling, ramp handling as well as fuel and oil handling. The trend in the decrease of prices is maintained, while developments in quality levels were evaluated as heterogeneous by stakeholders.

5.8.1 Public consultations

In December 2009, the European Commission launched a public consultation concerning application of EU legislation in the field of air passenger rights.[82] Furthermore, the European Commission released a list of recommendations to guarantee travellers a safe and problem-free journey during Christmas holidays and announced details of a Europe-wide publicity campaign to make citizens aware of their passenger rights.[83]

In order to give the European Commission a more comprehensive picture of what interested parties perceive to be the future of air passenger rights, the consultation summarises the main points identified in which there seems to be room for improvement regarding the application. It aims to gather stakeholders' opinions on the existing problems and preferred solutions in order to assess the quality and effectiveness of the implementation and enforcement of air passenger rights legislation.

Until March 2010, all citizens and organisations are welcome to contribute to this consultation. The results of the consultation will be presented at a stakeholder conference in 2010.

Also in December 2009, the European Commission initiated a study concerning fines and periodic penalty payments in cases of non-compliance with aviation safety rules. Until January 2010, the European Commission will gather suggestions for preparation of implementing rules in cases of non-compliance with provisions of Regulation 216/2008.

In December 2009, the European Commission launched a public consultation in electronic form concerning an impact assessment for a possible revision of the Directive 96/67/EC on access to

[81] http://ec.europa.eu/transport/air/studies/doc/airports/2009_02_ground_handling.pdf
[82] http://ec.europa.eu/transport/passengers/consultations/2010_03_01_apr_legislation_en.htm
[83] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1924

the groundhandling market at Community airports. The Directive introduced minimum requirements for transparency of information, and market access competition for provision of these services depending on the size of the airport. The aim of the Directive was to introduce competition in order to reduce costs to airlines and improve the quality of services. The European Commission is considering a revision of the Directive and is therefore now undertaking an impact assessment of a possible revision to the Directive. Until February 2010, the consultation aims to collect views on the current implementation of the Directive and possible options for revision.
Following its Communication "A sustainable future for transport: Towards an integrated, technology-led and user friendly system"[84], the European Commission opened a public consultation from June to September 2009 to gather views on the future of transport and on possible policy options. The results are presented on the European Commission's website[85]. At the beginning of the year, the abovementioned Communication was prepared by another consultation[86].

From February to April 2009, the European Commission organised a public consultation concerning its Green Paper "TEN-T: A policy review – Towards a better integrated trans-European transport network at the service of the common transport policy".[87] With the Green Paper, the European Commission initiates a broad review process of the trans-European transport network policy (TEN-T). While the review considers future political and economical challenges, the European Commission seeks the opinion of a broad range of shareholders on its proposals prior to deciding on legislative proposals and other relevant action to be taken. In July 2009, the European Commission published a summary report with received responses.[88]

In February 2009, the consultation period concerning the impact of aviation security measures and body scanners on human rights, privacy, personal dignity and data protection was closed. These consultations were carried out in the light of a Resolution adopted by the European Parliament. On the basis of these consultations, the European Commission will make a report on body scanners and the impact of their use in the field of aviation security on human rights, privacy, personal dignity, health and data protection. The report will address the questions raised by the European Parliament. It will also form the basis of whether or not the European Commission will bring forward legislation to allow body scanners as a method of screening at airports and/or under what conditions they could be allowed.

[84] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0279:FIN:EN:PDF
[85] http://ec.europa.eu/transport/strategies/consultations/2009_09_30_future_of_transport_en.htm
[86] http://ec.europa.eu/transport/strategies/consultations/2009_03_27_future_of_transport_en.htm
[87] http://ec.europa.eu/transport/infrastructure/consultations/2009_04_30_ten_t_green_paper_en.htm
[88] http://ec.europa.eu/transport/infrastructure/consultations/doc/2009-07-31_summary_report_green_paper_on_future_ten-t_networks.pdf

5.9 Public Service Obligations – PSO

In a free market system, the supply of routes by airlines should be compensated by passengers paying for these services. However, there are certain routes where demand is not guaranteed but the society (or at least the relevant local politicians) wants to retain these services because they are vital for the economic development of the remote region or island which they serve. In order to maintain appropriate scheduled air services, EU Member States may impose public service obligations (PSO) on these routes. Should no air carrier be interested in operating the route on which the obligations have been imposed, the Member State concerned may restrict the access to the route to a single air carrier and compensate its operational losses resulting from the PSO. Through a public tender being published in the Official Journal of the European Union, airlines are assigned for these PSO services; additionally, all changes have to be announced therein. In the case of an unforeseen route failure, the designation of an alternative airline is possible with the goal that the route will be continuously served.

The following text concentrates solely on the quantitative changes or effects which have taken place in 2009. Table 5-1 gives an overview of the status as of 2009 compared to the 2 previous years.

Table 5-1: No. of PSO Flight Routes

Source: Own calculation based on data provided by the EC[89]

Country	Domestic	International	Total 2009	Total 2008	Total 2007
Czech	0	0	0	3	0
Finland	3	1	4	4	4
France	37	7+7 TOM	51	57	73
Germany	3	0	3	3	3
Greece	25	0	25	25	25
Ireland	7	0	7	7	7
Italy	29	0	29	30	31
Portugal	26	0	26	26	27
Spain	17	0	17	16	16
Sweden	10	0	10	11	11
UK	26	0	26	26	26
Iceland	7	0	7	7	7
Norway	42	0	42	40	40
Sum EU	183	8+7	198	208	223
Sum overall	232	8+7	247	255	270

Currently, public service obligations are imposed on 198 domestic and intra-European routes within the European Union. Most routes are purely domestic with the exception of 8 routes, one

[89] http://ec.europa.eu/transport/air/internal_market/doc/2009_11_03_pso_inventory.pdf

out of Finland and 7 out of France, all servicing Strasbourg. The TOM routes are not international routes but they are intercontinental services to overseas territories, which makes them more comparable to international flights. The number of ceased operations seems to be quite high for these international routes compared to domestic routes. Including the flights to Iceland and Norway, which are subject to Community law, the overall number of PSO services increases to 247. Compared to the previous year there is a decrease of 10 PSO services within the EU, but a slightly lower decrease of 8 services when Iceland and Norway are included. Most PSO services connect airports of regions which have a relatively low population density and which are difficult to reach by surface transport modes. In many countries these are island airports; in Norway these are the airports along the coastline.

In the Czech Republic there were 3 tenders for PSO-services, but they were unsuccessful. All 3 concerned international routes from Ostrava. This is all the more surprising since the number of potential airlines would be twice as high as for domestic routes because most of the PSO services are flown by national airlines. This is not self-explanatory, because the tender is published Europe-wide, but empirically it is a fact. The same can be applied for 3 international routes which were intended from Strasbourg. France is again a driver of the overall reduction of PSO services in Europe, but to a lesser extent than in the previous year: 6 services in 2009 compared to 16 in 2008. Italy and Sweden also show a decrease, but only of one single service. Spain and Norway are the only 2 countries showing a slight increase of services. For all the other countries there are now changes. More interesting, however, is that there are several countries not applying PSO services at all. Particularly the unsuccessful tender of the Czech Republic demonstrates that these services have not yet entered any of the newer EU member states, the countries which formerly had a socialist economic system. Also interesting to note is that there is no increase of PSO services in 2009 caused by the overall economic crisis, although this crisis caused several airlines to stop services. The reason might be that the public hand was not able to invest anti-cyclically to take over some of these routes by applying PSO regulations to them.

6 Environmental development

6.1 The Year in Brief

On 2nd February, 2009, the EU directive for the inclusion of aviation activities in the EU emissions trading scheme in the year 2012 (2008/101/EC) came into force. From the year 2012 onwards, aircraft operators will be obliged to surrender allowances for virtually all flights landing at and departing from any airport in the EU. As a result, the European emissions trading scheme for the limitation of CO_2 emissions will not only affect European airlines, but also airlines from third countries. The main elements of this directive are described below.

On 25th June, 2009, the EU directive for the improvement and the extension of the greenhouse gas trading system of the European Community (2009/29/EC) came into force. This directive introduces provisions for the years 2013 until 2020. The aviation-specific regulations of this directive are summarized below.

In August 2009, the European Commission published the official list specifying the administering EU Member State for each aircraft operator performing an aviation activity under the EU emissions trading system. In order to reduce the administrative burden on aircraft operators, Directive 2008/101/EC provides for one Member State to be responsible for each aircraft operator. The list of aircraft operators and their administering Member States should ensure that each operator knows which Member State it will be regulated by and that Member States are clear on which operators they should regulate.

6.2 The EU directive for the inclusion of aviation activities in the EU Emissions Trading Scheme in the year 2012

The EU directive 2008/101/EC, as it came into force in February 2009, contains the following main provisions for the inclusion of aviation into the existing emission trading scheme. A detailed description can be found in 'Observatory of the European Air Transport Market - Annual Report 2008', published by the European Commission in 2009.

The emission trading scheme will cover all flights departing from or arriving at EU airports from 2012 onwards. Domestic flights will be subject to the same rules as international air traffic. This way, both European airlines and airlines from third countries operating in the European market will participate in the European emissions trading scheme without discrimination. Aircraft operators will be obliged to surrender allowances for CO_2 emissions. Allowances are required for flights by aircraft with a maximum take-off mass of or above 5,700 kg. Flights performed under visual flight rules and rescue flights (amongst a number of other exemptions) are excluded from the scheme. Regulations for emission monitoring and reporting have been in effect since 2009, while the first emission trading year for aircraft operators will be in 2012.

In the year 2012, the total quantity of allowances to be allocated to aircraft operators will be equivalent to 97% of the historical aviation emissions (so-called overall "cap"). Allowances allocated to aircraft operators will be valid within the aviation sector only. However, it will be possible to purchase additional permits from other sectors or from the project-based Kyoto instruments "Joint Implementation" and "Clean Development Mechanism". Aircraft operators may use emission permits from "Joint Implementation" and "Clean Development Mechanism" for up to 15 % of the number of allowances they are required to surrender in 2012. The use to be made of revenues generated from the auctioning of allowances shall be determined by the Member States. However, the revenues should be used to tackle climate change in the EU and third countries, inter alia, to reduce greenhouse gas emissions, to adapt to the impacts of climate change, to fund research and development in this field, etc.

As mentioned earlier, directive 2008/101/EC provides for one Member State to be responsible for each aircraft operator. Article 18a of the directive contains the provisions governing the assignment of each aircraft operator to its administering Member State. The administering Member State in respect of an aircraft operator shall be:

(a) in the case of an aircraft operator with a valid operating licence granted by a Member State, the Member State which granted the operating licence in respect of that aircraft operator; and

(b) in all other cases, the Member State with the greatest estimated attributed aviation emissions from flights performed by that aircraft operator in the base year.

In August 2009, the European Commission published the official list of aircraft operators and their administering Member States. This list is based on data provided by Eurocontrol using records of flight plans. According to Article 3d of the Directive, the number of allowances to be auctioned by each Member State shall be proportionate to its share of the total attributed aviation emissions for all Member States for the reference year reported (2010). This provision determines the amount of revenues generated from the auctioning of allowances per Member State. According to recently published DLR estimations (Schaefer et al., 2010), only a few EU Member States will generate considerably high amounts of revenues from the auctioning of allowances: the United Kingdom, Germany, France, the Netherlands, Spain and Italy. These EU States will receive between 34 % (UK) and 4 % (I) of the total revenues from auctioning in the year 2012. Consequently, these Member States will receive more than two thirds of the total revenues from the auctioning of allowances while the remaining 22 EU Member States will gain less than one third combined.
This can firstly be explained by the fact that some of the biggest airlines of the world operate under a licence granted by one of these Member States, e.g. British Airways, Lufthansa, Air France/KLM, etc. Secondly, due to the relatively high number of scheduled flights served within as well as to and from these EU Member States, especially to and from intercontinental destinations, the amount of attributed emissions is considerably bigger compared to those of the remaining Member States.

6.3 The EU directive for the improvement and extension of the EU Emissions Trading Scheme in the years 2013 to 2020

The EU directive 2009/29/EC for the period 2013-2020 came into force in June 2009. The aviation-specific rules are summarized below. A full description can be found in 'Observatory of the European Air Transport Market - Annual Report 2008', published by the EU Commission in 2009.

Directive 2009/29/EC aims to improve and extend the greenhouse gas emission allowance trading system of the Community. Due to its broader nature, it adopts regulations for all sectors included in the system and very few aviation-specific rules. Most of the regulations for the first year of the inclusion of aviation into the EU ETS, which are described above, will be further applied in the period 2013 to 2020. Among other issues, these regulations refer to the geographical coverage of the scheme, exemptions from the scheme, the rules for emission monitoring and reporting and the criteria for the use to be made of the revenues from auctioning allowances.

In contrast to this, from 2013 onwards the so-called 'cap' for the participants in the scheme will be lowered by another 2%. Also, the use of the project-based Kyoto instruments "Joint Implementation" and "Clean Development Mechanism" will be lowered significantly for aircraft operators. In the period 2013 to 2020, the percentage of "Joint Implementation" and "Clean Development Mechanism" credits used by aircraft operators to cover their emissions will be

calculated on the basis of the reductions achieved in the sectors, but shall not be more than 1.5 % of the amount of allowances they are required to surrender per year.

References:

Schaefer, Martin, Scheelhaase, Janina, Grimme, Wolfgang, Maertens, Sven: "The Economic Impact of the Upcoming EU Emissions Trading System on Airlines and EU Member States – An Innovative Modelling Approach", in: 51st Transport Research Forum, Papers and Proceedings of the 51st Transportation Research Forum, Arlington, Virgina, 11th – 13th March 2010

7 Consumer issues

7.1 Punctuality

According to the Performance Review Commission of Eurocontrol[90], "punctuality is the ability to operate scheduled times (i.e. the deviation between actual time and scheduled time)". The quality characteristic 'punctuality' (or 'unpunctuality') is, besides the amount of traffic, a further indicator for describing traffic performance in aviation. Passengers are particularly aware of delays in arrival, as these jeopardise their ability to catch connecting flights or take advantage of other arrangements for continuing the journey. From an operational point of view, both delays and early arrival/departure can cause numerous problems with, for example, the allocation of resources in very busy airports or airspace. The flight schedules published by the airlines therefore include extra periods of time to ensure a minimum level of punctuality. These time buffers are added to the ideal, undisturbed flight times, taking into account mainly empirically derived knowledge concerning the actual distribution of block times (the period of time between leaving the parking position at the starting airport and arrival at the parking position at the destination airport). Fluctuations in the actual duration of flights over the course of a season result from diverse influencing factors that cannot be anticipated exactly, for example weather conditions, different flight paths and levels, air traffic control measures and different amounts of time taken to carry out clearance processes. The time buffers therefore moderate the number of actual 'delays', albeit at the cost of additional scheduled waiting time that the passenger must spend in the air traffic system.

7.1.1 Actual punctuality

There is no public, unified database on aviation punctuality in Europe. Instead, voluntarily published information from airlines or airports can be used (where available) to attain a picture of the quality of services.

Alternatively, Eurocontrol[91] provides a great deal of performance data, much of which concerns punctuality. However, this data almost exclusively deals with the topic of air traffic management. Delays caused by factors other than air traffic control intervention or centralised traffic flow management are not documented.

Data from two airline associations in Europe can be considered as a reference for punctuality from an airline perspective. The Association of European Airlines (AEA) forms the largest industry association with regard to the overall traffic performance (2009: 755,458 mill. RPK). The members represent the carriers known as Full Service Network Carriers. Their detailed data,

[90] Performance Review Commission: ATM Airport Performance (ATMAP) Framework. Brussels 2009
[91] European Organisation for the Safety of Air Navigation; an intergovernmental organisation made up of 38 Member States and the European Community.

recorded consistently over many years and relating to their member airlines (30 on average), makes a highly accurate statement on European aviation possible. The AEA has, unfortunately, not published such data since that for the winter season 2008/2009; however, the fundamental trends in this data should be typical for the entire year 2009. This theory is supported by a comparison with the two other named data sources. According to this, a significant recovery in punctuality statistics correlates with the decline in traffic figures. The second airline association taken as a reference (the European Regions Airline Association – ERA) represents, according to its own information, 200 companies including 60 regional airlines. Performance data is available for just over half of these. 47,063 mill RPK (36 reporting ERA member airlines) were documented in 2008.

According to the AEA's data on the winter season 2008/09, which comprises the months November to March, the AEA member airlines achieved a punctuality of 82.3% (arrival) and 83.2% (departure) on inner-European and medium-haul flights. A comparison can best be made with the statistics from the same association for the first quarter of 2008, as no comparable five-month period for "winter 2007/08" is available due to changes to the reporting methods. At that time, the punctuality levels were 78.9% and 80.4%.

The European Regions Airline Association (ERA) reported a positive trend in punctuality figures, which reached 88.9% in the first half of 2009. In the same period in the previous year, only 85% of all ERA-reported airlines were punctual on departure. However, 97% (previous year: 98%) of all departures took place within one hour of the scheduled time. The punctuality improvement apparently correlates with the reduction in traffic resulting from the decline in demand. Compared to the first half of 2009, the ERA member airlines transported 7.2% fewer passengers (23,486,000) and suffered a 2.6% loss in Revenue Passenger Kilometres (14,746 million RPK).

7.1.2 Delays due to Air Traffic Flow Management

Airspace and airports - infrastructure with a limited capacity - are made available to the users in such a way that they match the users' needs as well as possible. In order to reconcile fluctuations in capacity and demand at different times and in different places, harmonisation intervention is often necessary. Thus, overloads are avoided and, at the same time, the use of the capacity available is maximised for economic reasons. The mechanism of this harmonisation is better known as "Air Traffic Flow and Capacity Management". The Flow Management part of this is handled by the Central Flow Management Unit (CFMU) in Europe, or the ECAC region. This unit is operated by Eurocontrol in Brussels.

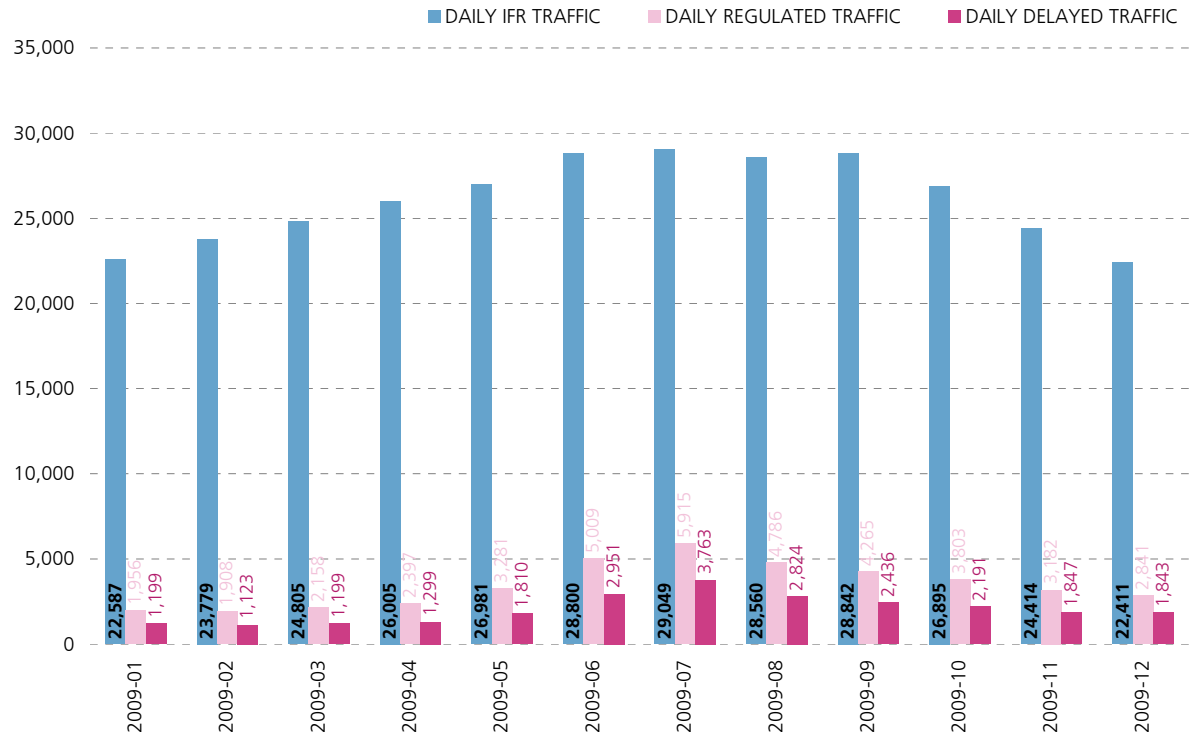
The CFMU regulates the air traffic in the case of a threat of scarce resources at destination airports or in the airspace leading there primarily by imposing take-off delays for aircraft still on the ground. This avoids aircraft having to wait in the air for reasons of capacity. Waiting due to

such delays at the departure airport has both economical and ecological advantages. These departure delays are better known to the customer as 'airway slot'.

Of the 9,527,570 flights[92] registered by Eurocontrol in 2009, 1,265,934 (13.3%) were regulated flights[93]. In total, 747,108 (7.8%) of all registered flights were delayed flights[94], which were actively delayed by traffic flow management. Figure 7-1 shows the average daily flights in the Eurocontrol area and the proportion of these which had to be regulated and delayed. Compared to the previous year, during which 1,212,254 were hit by delays caused by ATFM, these were reduced by the CFMU-managed delays by 38.4% on average. Reductions range from an incredible -63% in February to a still enormous -21% in October. The largest contribution to this vast improvement is probably due to the 6.4% reduction in traffic. In general, the risk of delay rises disproportionally high with increasing traffic and now it can be seen that this phenomenon also applies in reverse.

Figure 7-1: Number of daily regulated and delayed flights per month in 2009

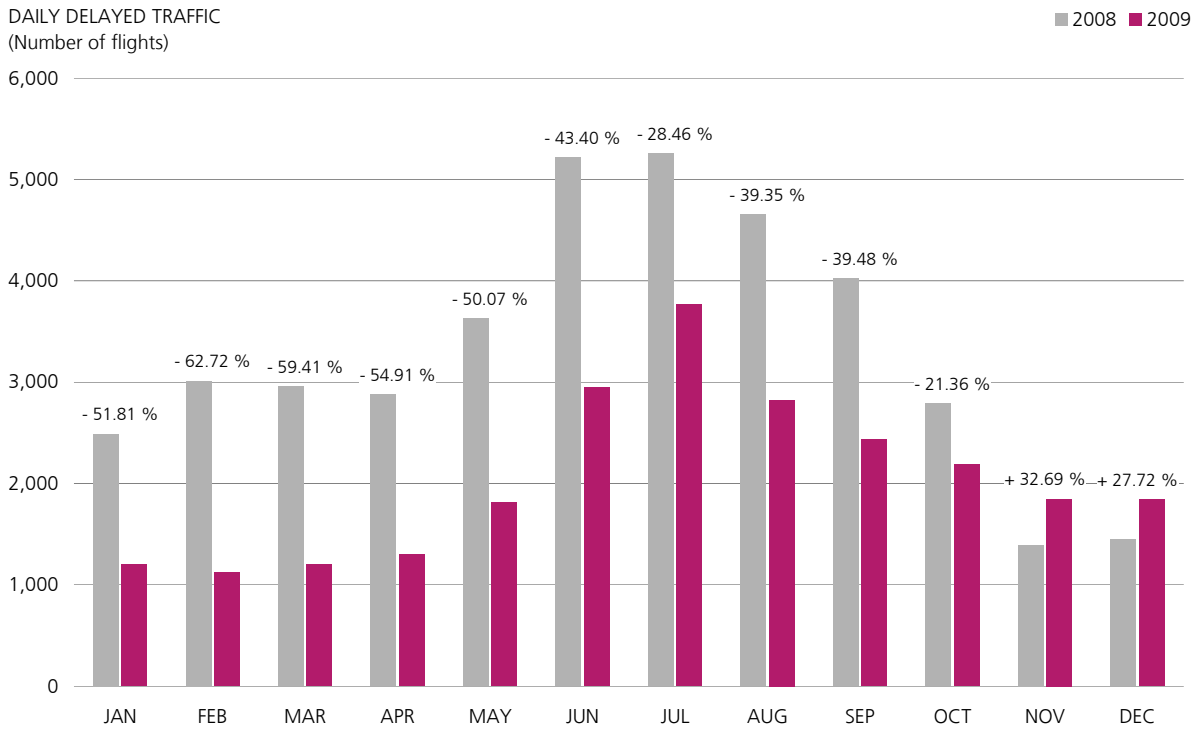
Source: Eurocontrol: CFMU ATFCM Public Report December 2009. Brussels, Belgium 2009



[92] Number of flight plans having been activated in the EUROCONTROL CFMU TACT-System
[93] Number of flights / percentage of flights with airway slot allocation (with & without delay)
[94] Number of flights / percentage of flights subject to delays due to Air Traffic Flow Management measures

Figure 7-2: Number of daily delayed flights per month in 2009 vs. 2008

Source: Eurocontrol: CFMU ATFCM Public Reports. Monthly series. Brussels, Belgium 2008, 2009

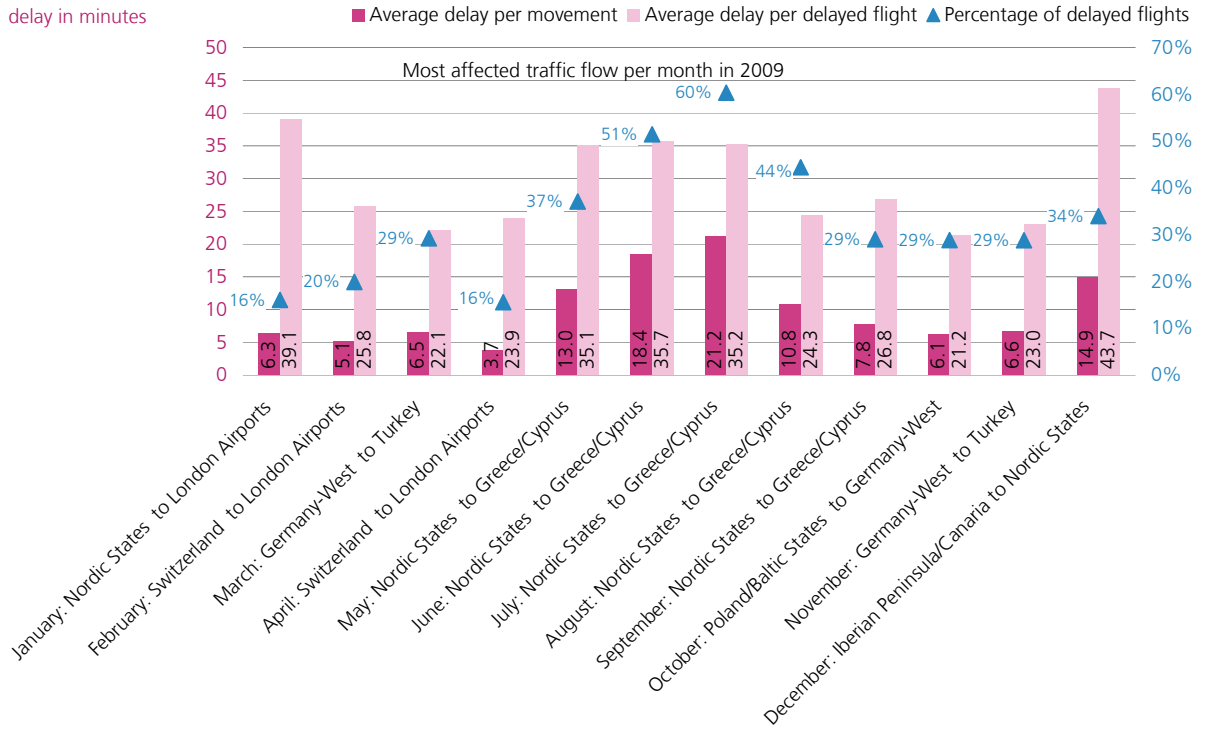


7.1.3 Most affected traffic flows

There are a series of connections within Europe on which air traffic is severely at risk of delays due to air traffic flow management intervention. The most serious delays generally occur during the summer months, when European holidaymakers typically head for the warm water destinations around the Mediterranean Sea. Connections from the most northerly points to Greece in the south are particularly prone to delays as traffic-intensive Central Europe has to be passed and operations are extremely busy at the destination. The route from Scandinavia to Greece is regarded as the most affected traffic flow between May and September. Between 37% and 60% of all traffic on this route is subject to capacity-related delays. The relatively high delay figures at the beginning of 2009 (average delay per delayed flight of up to 39 minutes) were due to weather-related capacity shortages at various European airports. Despite declining traffic levels (-10% in January) and reductions in ATFM delays, the delays at some airports increased considerably. London Heathrow, Paris Charles de Gaulle, Frankfurt, Munich, Brussels, Vienna, Geneva, Milan, Madrid and Istanbul airports were particularly affected by such reductions in arrival capacities.

Figure 7-3: Monthly most affected traffic flows 2009

Source: Eurocontrol/CODA: Delays to Air Transport in Europe – November 2009. Brussels, Belgium. 2009



7.2 Consumer protection

In December 2009, a report concerning air passengers' rights, requested by DG TREN, was published[95]. In fieldwork during May and June 2009, focus was placed on air transportation and the awareness passengers have of their new rights introduced mainly by Regulations (EC) No 261/2004 and (EC) No 1107/2006. In comparison to the previous survey of 2005, the current results show a significant drop in awareness of reinforced air passenger rights, although the results are encouraging concerning information on passengers' rights provided by air transport companies.

In July 2009, the European Commission was commended by the European Ombudsman, P. Nikiforos Diamandouros[96]. The investigation showed that the European Commission had actively pursued the complainant's case by ensuring that the National Enforcement Body (NEB), whose role is to verify that transport operators treat all passengers in accordance with their rights, took the necessary measures. The Ombudsman welcomed the European Commission's announcement that it would help national enforcement bodies to reduce language barriers for European travellers who encounter problems.

[95] http://ec.europa.eu/transport/passengers/air/doc/2009_12_passengersrights_report_en.pdf
[96] http://www.ombudsman.europa.eu/press/release.faces

7.2.1 Passenger rights according to Regulation (EC) No 261/2004

Regulation (EC) No 261/2004 of the European Parliament and of the Council of 11th February 2004 established common rules on compensation and assistance to passengers in the event of denied boarding and of cancellation or long delay of flights, and repealed Regulation (EEC) No 295/91.

On the European Commission's initiative, National Enforcement Bodies NEBs and stakeholders met for a fifth meeting concerning air passenger rights and its Regulation (EC) No 261/2004 in Brussels in May 2009.[97] The discussions focused mainly on the complaints-handling understandings between NEBs and between NEBs and airlines and on other issues to improve. Furthermore, the NEBs were invited to exchange best practice and information.

Following this exchange of opinions, the European Commission updated its complaint form for air passengers[98] and its list[99] of the national enforcement bodies. The current evaluation phase would be concluded by a Commission Communication analysing the progress of the application of the Regulation and the best practices that have been developed in order to strike the best balance between the interests of passengers and of the industry.

In 2009, the European Court of Justice was enabled to interpret several concepts of the abovementioned Regulation.

In February 2009, the Judgment of the European Court of Justice concerning interpretation of Article 5 (3) of Regulation (EC) No 261/2004 and concepts of 'extraordinary circumstances' and 'reasonable measures' within a reference for a preliminary ruling was published in the Official Journal[100]. In its decision concerning technical problems, the Court had to interpret whether the problems which led to the cancellation of the flight were covered by 'extraordinary circumstances', which are exempt from the obligation to pay compensation. In its judgement, the Court found that a technical problem in an aircraft which leads to the cancellation of a flight is not covered by the concept of 'extraordinary circumstances' within the meaning of that provision, unless that problem stems from events which, by their nature or origin, are not inherent in the normal exercise of the activity of the air carrier concerned and are beyond its actual control. The frequency of the technical problems experienced by an air carrier is not in itself a factor from which the presence or absence of 'extraordinary circumstances' within the meaning of Article 5(3) of Regulation No 261/2004 can be concluded. Furthermore, the fact that an air carrier has complied with the minimum rules on maintenance of an aircraft cannot in itself suffice to establish that that carrier has taken 'all reasonable measures' within the meaning of that Regulation and, therefore, to relieve that carrier of its obligation to pay compensation provided by Articles 5(1) and 7(1).

[97] http://ec.europa.eu/transport/passengers/air/doc/neb/2009_05_14_minutes.pdf
[98] http://ec.europa.eu/transport/passengers/air/doc/complain_form/eu_complaint_form_en.pdf
[99] http://ec.europa.eu/transport/passengers/air/doc/national_enforcement_bodies.pdf
[100] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:044:0020:0021:EN:PDF

Following that judgement, another reference for a preliminary ruling was rejected.[101]

In November 2009, the European Court of Justice clarified the distinction between the concepts of 'delay' and 'cancellation' in two related disputes in the main proceedings[102]. Regulation 261/2004 must be interpreted as meaning that a flight which is delayed, irrespective of the duration of the delay, even if it is long, cannot be regarded as cancelled when the flight is operated in accordance with the air carrier's original planning. Passengers whose flights are delayed may be treated as passengers whose flights are cancelled and they may thus rely on the right to compensation when they suffer, on account of a flight delay, a loss of time equal to or in excess of three hours. To be precise: when they reach their final destination three hours or more after the arrival time originally scheduled by the air carrier. Such a delay does not, however, entitle passengers to compensation if the air carrier can prove that the long delay was caused by extraordinary circumstances which could not have been avoided even if all reasonable measures had been taken, namely circumstances beyond the actual control of the air carrier. Furthermore, the Regulation must be interpreted as meaning that a technical problem in an aircraft which leads to the cancellation or delay of a flight is not covered by the concept of 'extraordinary circumstances' within the meaning of that provision, unless that problem stems from events which, by their nature or origin, are not inherent in the normal exercise of the activity of the air carrier concerned and are beyond its actual control.

Another reference for a preliminary ruling is still pending with the European Court of Justice.[103] It must be clarified whether or not a change in reservation to another flight which was instigated by the air carrier or by the tour operator alone constitutes a situation covered by Article 4 (3) of that Regulation.

In July 2009, the European Court of Justice clarified within a reference for a preliminary ruling on the interpretation of Article 5 of Regulation (EC) No 44/2001[104] in the context of a passenger claim under Regulation (EC) No 261/2004. Regulation (EC) No 44/2001 must be interpreted as meaning that, in the case of air transport of passengers from one Member State to another Member State, carried out on the basis of a contract with only one airline, which is the operating carrier, the court having jurisdiction to deal with a claim for compensation founded on that transport contract and on Regulation (EC) No 261/2004, is that court, at the applicant's choice, which has territorial jurisdiction over the place of departure or place of arrival of the aircraft, as those places are agreed in that contract.[105]

7.2.2 Passenger rights according to Regulation (EC) No 1107/2006

Since July 2008, the provisions of Regulation (EC) No 1107/2006 of the European Parliament and of the Council concerning the rights of disabled persons and persons with reduced mobility

[101] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:282:0033:0033:EN:PDF
[102] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:024:0004:0005:DE:PDF
[103] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:055:0008:0008:EN:PDF
[104] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2001:012:0001:0023:EN:PDF
[105] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:205:0008:0009:EN:PDF

when travelling by air[106] are fully applicable in order to offer persons with reduced mobility non-discriminating access to air transport.

The European Commission must report to the European Parliament and the Council by 1st January 2010 at the latest on the operation and the results of the Regulation. The report shall be accompanied, where necessary, by legislative proposals implementing in further detail the provisions of this Regulation, or revising it.

7.2.3 Misleading airline ticket websites

Following an EU-wide internet sweep against misleading advertising and unfair practices on airline ticket-selling websites in 2007, the results show a "step change" in airline ticket-selling websites across Europe in terms of compliance with consumer protection rules.[107] At the end of March 2009, enforcement actions had been completed in 85% of cases: 115 airline websites of the 137 websites investigated have been corrected, resulting in 94% of sites originally checked now being compliant.

Following the coming into force of Regulation (EC) No 1008/2008[108] on common rules for the operation of air services in the Community and Unfair Commercial Practices Directive 2005/29/EC[109], the European Commission aimed to comprehensively monitor the overall situation in the area of online air ticket sales in March 2009. Therefore, a "Health Check" was carried out to analyse the content of web pages of airlines, air carriers, travel agents and tour operators and to check this against the provisions of the existing legislation. It examined the different stages in the booking process up to the point just before the actual transaction was concluded. As a result, the study provides only an indication of suspected problems and where a full investigation might be appropriate. Only the Member States' enforcement bodies have the power to conduct an investigation and to determine whether or not a breach of the rules has in fact been committed. The report has been sent to Member States in order for them to consider whether a case for further investigation exists or not.

The investigation showed that 52 airlines have either been given a "clean bill of health" and undertaken to maintain the same standards, or immediately responded to the European Commission's consultation with undertakings to remedy outstanding issues.

The European Commission published the results of its consultations with airlines based on the health check study.[110] Furthermore, the European Commission is working with the airline

[106] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:204:0001:0009:EN:PDF
[107] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/783&format=HTML&aged=0&language=EN
[108] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:293:0003:0020:EN:PDF
[109] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:149:0022:0039:EN:PDF
[110] http://ec.europa.eu/consumers/enforcement/sweep/commission_consultation_results09-2.pdf

industry to establish an industry-wide agreement to uphold standards and to provide a level playing field for airlines across the EU.

8 Aircraft and Engine Manufacturers

8.1 The Year in Brief

Airbus A330-200 Freighter First Flight

Airbus' freighter derivative of its highly popular wide-body twin-jet A330 flew for the first time on 5th November 2009. The aircraft, which can carry a payload of 64 tonnes over 4000 nautical miles or 69 tonnes over 3200 miles, is scheduled to enter service in 2010 with Etihad Cargo. So far, ten customers have ordered a total of 64 A330 freighters. The type is expected to replace aging MD-11, DC-10 and A300 freighters and will contribute to a more economical and environmentally friendly air cargo system.

Boeing 787 First Flight

With a delay of more than two years, Boeing's new medium-sized wide-body aircraft 787 "Dreamliner" took off for the first time from the manufacturer's airfield in Everett, Washington on 15th December 2009. 851 "Dreamliners" have been ordered so far by more than 50 customers. The aircraft, which typically seats 210-250 passengers in its "-8" variant, features innovative technologies, such as ultra-high bypass turbofan engines from General Electric or Rolls Royce and a fuselage constructed entirely of carbon fibre/composite materials, which allow for a substantial reduction in fuel consumption, emissions and noise. Boeing plans to deliver the first aircraft at the end of 2010 to initial customer ANA from Japan. The aircraft, however, has to undergo a rigorous certification process, which is ambitiously planned to be completed in less than 12 months with a fleet of six test aircraft, operating almost around the clock. Aircraft list prices range from 161 to 171.5 million US$ for the "-8" variant and 194 to 205.5 million US$ for the larger "-9" variant. The "-3" variant for medium-haul flights has, however, been postponed indefinitely, due to cancellations/type swaps by airlines that had ordered this variant.

Boeing 777 Freighter First Deliveries

After having flown for the first time in July 2008, the Boeing 777-200 freighter entered service in 2009. The first delivery took place in February 2009 with Air France. A total of 16 aircraft have been delivered in 2009. Besides Air France, European operator German AeroLogic has also already received this type. With a maximum payload of 104t, the aircraft is designed to cater, for example, for the growth in the integrator market, where older types such as the DC-10 or MD-11 offer insufficient capacity.

China's C919 project launch

During the 2009 Asian Aerospace exhibition, the Chinese manufacturer Comac (Commercial Aircraft Corporation of China) unveiled its plans for a medium-sized single-aisle aircraft named C919, which should become a competitor in the market for aircraft with 150-200 seats, currently dominated by Airbus and Boeing. The aircraft is scheduled to enter service in 2016, which is considerably earlier than the successor types of the A320 and 737NG. In late December

2009, Comac announced that it had selected the French-US consortium CFM as engine supplier. CFM will supply a modern variant of its successful CFM56 engine, named LEAP-X.

Russian MS-21 project progress

Besides China, the Russian manufacturer Irkut also plans to enter the market for aircraft with more than 150 seats. In 2009, the main suppliers for the aircraft were announced. While the provision of engines went to the US manufacturer Pratt & Whitney, a number of suppliers from Europe have been selected for critical systems, such as Intertechnique and Liebherr.

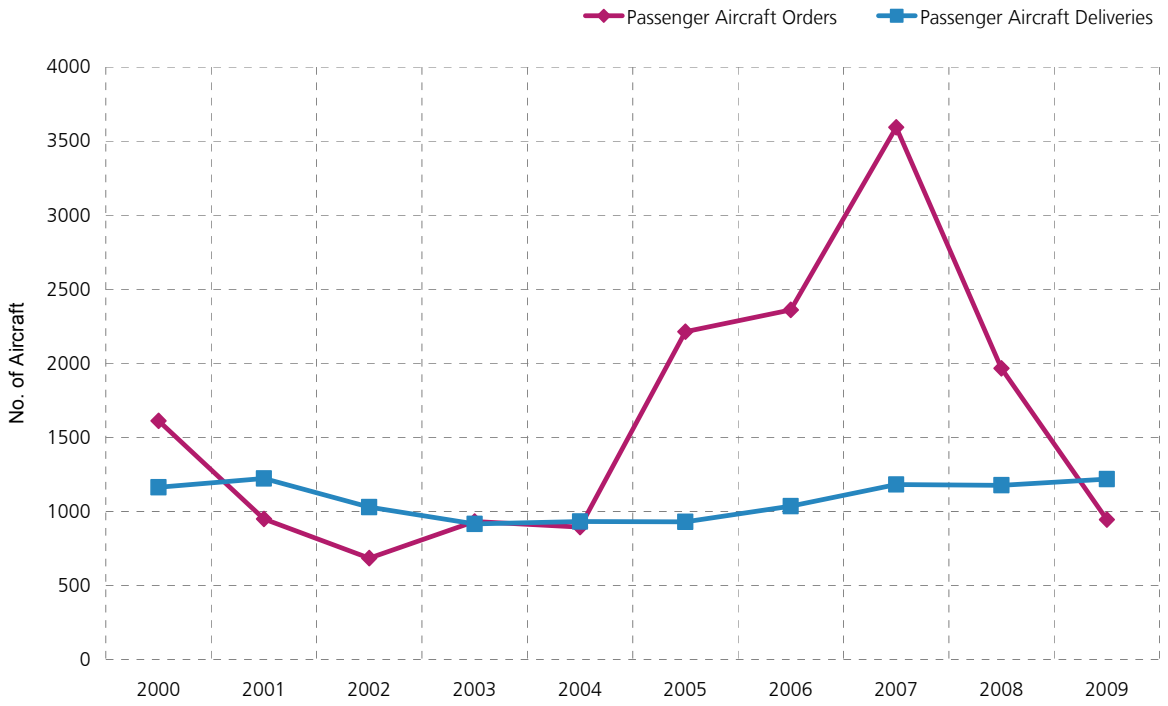
8.2 Aircraft market overview – orders

The market for civil aircraft in 2009 reflected the overall situation in the economy. The number of new orders declined sharply by more than half, as many airlines had to cope with the recession and deteriorating financial health. Overall, 948 passenger and cargo aircraft were ordered by commercial customers, down from almost 2000 the year before. Particularly the market for new cargo aircraft was almost non-existent in 2009. Only four new freighters were ordered (two A330-200F each by MNG Airlines and Turkish Airlines). This marks the weakest year for new orders for freighters in decades.

Although the financial crisis of 2008/2009 is considered to be the worst recession in more than half a century, orders by commercial customers remained on a level of the years 2003/2004, when the industry had to cope with the effects of the demand decline following the recession after the "dot-com-bubble" and the effects of the 2001 terrorist attacks. However, even in 2009, about 250 more aircraft were ordered than in 2001, the worst year for manufacturers in the last decade. This may be an indicator that airlines maintain a relatively positive outlook for the future and see the need to replace aging aircraft with more fuel efficient and environmentally friendly types.

Figure 8-1: Passenger aircraft orders and deliveries from 2000 to 2009

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend



Deliveries, in contrast, actually increased in 2009 compared to 2008.

Table 8-1: Geographical breakdown origin of commercial passenger and cargo aircraft orders in 2008/2009 by operator area

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Operator Area	Aircraft Orders 2009	Aircraft Orders 2008	Percentage Change Y-o-Y	Region Percentage Share 2009	Region Percentage Share 2008
North America	92	224	-58.9%	9.7%	11.3%
Asia	148	531	-72.1%	15.6%	26.8%
Europe	340	390	-12.8%	35.9%	19.7%
Thereof:					
- EU-27	197	302	-34.8%	20.8%	15.3%
- Non-EU-Europe	143	88	62.5%	15.1%	4.4%
Middle East	72	407	-82.3%	7.6%	20.6%
Latin America and Caribbean	53	143	-62.9%	5.6%	7.2%
Oceania	20	7	185.7%	2.1%	0.4%
Africa	52	59	-11.9%	5.5%	3.0%
Subtotal	**777**	**1761**	**-55.9%**	**82.0%**	**89.0%**
Unknown Area	171	217	-21.2%	18.0%	11.0%
Total	**948**	**1978**	**-52.1%**	**100.0%**	**100.0%**

The geographical breakdown of commercial aircraft orders in 2009 shows a slightly different picture than in 2008. Interestingly, airlines from Europe and, more specifically, from EU-27 Member States, have the highest share. A strong decline in orders came from operators located in the Middle East and Asia. The most important markets by country were Russia with 80 orders, the USA with 76 and Turkey with 56.

8.2.1 Aircraft orders by market segments, manufacturers and types

The decline in new orders, both by the number of aircraft and order value, was fairly similar for both Airbus and Boeing with around 60% fewer orders. Nevertheless, also in 2009, Airbus received more new orders from commercial customers than Boeing. It was the third consecutive year in which Airbus received more orders than Boeing.

Embraer, the Brazilian manufacturer of regional jets, was hit particularly strongly, with new orders declining by almost 80%. Bombardier from Canada, in contrast, increased the number of orders by 20%. This can be attributed to the fact that the new CSeries regional jet was offered for the first time. 50 orders were recorded for the aircraft, which seats about 110-130 passengers and is scheduled to enter service in 2013.

Again, a very positive year was recorded by ATR, the French-Italian manufacturer of turboprop aircraft. After years of turboprops being replaced by small regional jets, a reverse trend can now be observed, as the operating costs of turboprops are considerably lower than those of jets. Not only "traditional" regional airlines are among the customers for new turboprop aircraft; even low-cost carriers such as Air Berlin prefer these aircraft for routes with weaker demand.

Table 8-2: Cargo and passenger gross aircraft orders by manufacturer

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Manufacturer	No of Aircraft Ordered in 2009	No of Aircraft Ordered in 2008	Absolute Change Year-over-Year	Relative Change Year-over-Year	Value of 2009 Orders in Million US-$ (list prices)	Value of 2008 Orders in Million US-$ (list prices)	Absolute Change Year-over-Year	Relative Change Year-over-Year
Airbus	380	913	-533	-58.4%	40,485	115,836	-75,351	-65.0%
Boeing	253	653	-400	-61.3%	27,981	70,922	-42,942	-60.5%
Embraer	33	145	-112	-77.2%	1,339	5,701	-4,362	-76.5%
Bombardier	131	109	22	20.2%	5,531	3,418	2,114	61.8%
Antonov	32	44	-12	-27.3%	480	660	-180	-27.3%
Sukhoi	26	25	1	4.0%	728	695	33	4.7%
ATR	39	23	16	69.6%	748	429	319	74.3%
Harbin	0	20	-20	-100.0%	0	80	-80	-100.0%
Tupolev	17	16	1	6.3%	748	704	44	6.3%
Xian	0	10	-10	-100.0%	0	60	-60	-100.0%
RUAG	6	7	-1	-14.3%	39	29	10	35.9%
CAIC	8	5	3	60.0%	106	100	6	6.0%
Ilyushin	4	3	1	33.3%	240	24	216	900.0%
Viking Air	16	3	13	433.3%	51	10	42	433.3%
Aircraft Industries - Let	2	1	1	100.0%	2	1	1	100.0%
Indonesian Aerospace	1	1	0	0.0%	6	5	1	22.2%
Total	**948**	**1978**	**-1030**	**-52.1%**	**78,483**	**198,673**	**-120,189**	**-60.5%**

Broken down by aircraft type, it once again becomes obvious that the A320 family remained the most important product for Airbus. The decline in new orders for the A319/320/321 aircraft family was less than the average of all aircraft families, but still significant with almost -50%. In anticipation of the new A350XWB, the market for the large four-engine wide-body family A340 has almost completely vanished. For the A380, at least four orders were recorded in 2009, two of them from the French carrier Air Austral, which plans to equip its aircraft in a single-class layout with 840 seats, the highest density seen so far for this type.

Table 8-3: Gross orders of Airbus aircraft, breakdown by type

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Aircraft Type	2009	2008	Percentage Change
A318/319/320/321	301	597	-49.6%
A330-200/-300	44	95	-53.7%
A330-200F	4	11	-63.6%
A340-300/-500/-600	0	2	-100.0%
A350XWB	27	178	-84.8%
A380	4	9	-55.6%
Total	**380**	**892**	**-57.4%**

Boeing's decline in new orders is similar to that of Airbus. However, several aircraft series continue to struggle to find more customers. The Boeing 747-8 as passenger variant has so far only found two customers (Korean Air and Lufthansa), while the cargo variant has a solid order backlog, but no new orders in 2009 due to the weak world economy. A few sales were recorded for the 767-300ER (passenger version), which can be seen as a reaction by airlines to persistent delays in the delivery schedule of the 787.

Still continuously in good demand is the 777 series, which is Boeing's state-of-the-art large, wide-body, long-haul jet. Airlines such as Emirates or Turkish Airlines, who are building up their long-haul fleets and looking for high-capacity and fuel-efficient aircraft, rely on the "-300ER" variant, which can seat almost as many passengers as the 747-400. Other airlines are phasing out the 747-400, due to its increasing age and less efficient fuel consumption.

Table 8-4: Gross orders of Boeing aircraft, breakdown by type

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Aircraft Type	2009	2008	Percentage Change
B737NG (-600/-700/-800/-900/-900ER)	188	477	-60.6%
B747-400F/ERF	0	0	-
B747-8	5	0	-
B747-8F	0	0	-
B767-300ER	7	29	-75.9%
B767-300ERF	0	0	-
B777-200/-200ER/-200LR/-300/-300ER	29	53	-45.3%
B777-200LRF	0	1	-100.0%
B787	24	93	-74.2%
Total	**253**	**653**	**-61.3%**

Cancellations

Despite the economic crisis, cancellations decreased for Airbus in 2009 when compared to 2008. While 116 Airbus orders were cancelled by commercial customers in 2008, this number declined to 37 in 2009.

In contrast to Airbus, the cancellations for Boeing increased sharply from five in 2008 to 116 in 2009. 81 of these cancellations were for the 787 series, which is apparently attributable to the fact that ongoing delays in the programme were unacceptable to the airlines concerned.

Embraer was also hit hard by cancellations – both the Brazilian manufacturer and its joint venture in China, Harbin Embraer, had to cope with 62 cancellations. Embraer suffered from the bankruptcy of Alpi Eagles and BRA Transportes Aereos. Additionally, US Airways reassessed the operation of its Embraer 195 aircraft and cancelled the remaining units on order and the Chinese carrier Tianjin Airlines cancelled 25 ERJ-145, which should have been manufactured at Harbin.

Deferrals

The number of deferred aircraft deliveries increased sharply for the second consecutive year. While back in 2007 only 24 Airbus deliveries were deferred, the number increased to 101 in 2008 and 175 in 2009. A large part of the deferrals came from US Airways, which requested postponement of delivery of not less than 77 A320, A330 and A350XWB aircraft.

A similar situation was experienced at Boeing, with 149 deferrals in 2009, up from 103 in 2008.

Table 8-5: Order backlog (commercial customers) at 31st December 2009 for passenger and cargo aircraft

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Manufacturer	No. of Aircraft as of 31st Dec 2009	No. of Aircraft as of 31st Dec 2008	Change YoY	Value in million US-$ (in 2009 list prices) as of 31st Dec 2009	Value in million US-$ (in 2008 list prices) as of 31st Dec 2008	Change YoY in million US-$
Boeing	3,320	3,655	-335	411,524	456,391	-44,867
Airbus	3,425	3,627	-202	429,145	448,327	-19,182
Embraer (incl. Harbin Embraer)	265	427	-162	10,488	16,228	-5,740
Bombardier	254	263	-9	9,781	8,926	854
Tupolev	75	84	-9	3,300	3,659	-359
Sukhoi	122	123	-1	3,416	2,874	542
CAIC	148	140	8	2,456	2,800	-344
ATR	132	150	-18	2,538	2,773	-236
Antonov	111	148	-37	1,766	2,150	-384
Viking Air	45	29	16	144	800	-656
Ilyushin	22	24	-2	667	576	91
Harbin	26	27	-1	104	108	-4
RUAG	7	7	0	46	29	17
Indonesian Aerospace	1	1	0	6	5	1
Aircraft Industries - Let	6	1	5	6	1	5
Mitsubishi	15	0	15	600	0	600
Total	**7,974**	**8,706**	**-732**	**875,986**	**945,648**	**-69,662**

The decline in orders at the same time as relatively constant deliveries results in a significant reduction of aircraft remaining in the order books and their respective values. For all manufacturers combined, the backlog decreased by 732 units or almost 70 billion US$ at list prices. For the first time, Airbus now has more orders remaining than Boeing.

For the manufacturers of regional aircraft, particularly the Embraer order book entries fell sharply from 427 at the end of 2008 to 265 in 2009. However, while being exposed in the market for small regional jets, Embraer has built up a new main pillar in the area of business jets with its Phenom series.

While the situation in 2009 was rather disappointing for many airframers, the order books are still quite well-filled and at constant production rates; both Airbus and Boeing have sufficient orders in the books to fully utilise production capacities for more than 8 years.

Table 8-6 shows major new aircraft orders by airlines globally. The largest order by number of aircraft in 2009 came from Hungarian low-cost carrier Wizz Air, which ordered 50 Airbus A320 in July. At list prices, this order has a value of more than 3.8 billion US$. Interestingly, the two largest orders by monetary volume came from Turkey and Ethiopia. Turkish Airlines, which has embarked on an ambitious growth strategy, ordered aircraft for almost 7.4 billion US$ at list prices, among them 22 wide-bodies. The order is almost evenly split between Airbus and Boeing. Ethiopian Airlines ordered 17 wide-bodies, among them 5 ultra-long-haul Boeing 777-200LR and 12 Airbus A350XWB, with an overall value of more than 4.1 billion US$ at list prices.

Table 8-6: Major new aircraft orders globally 2009

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Operator	Operator Country	Total no. of aircraft ordered in 2008	Type split	Total Order Value in million US-$ at list prices
Wizz Air	Hungary	50	50x Airbus A320-200	3845
Turkish Airlines	Turkey	48	20x Airbus A319-100 4x Airbus A321-200 2x Airbus A330-200 10x Airbus A330-300 12x Boeing 777-300ER	7398
Atlant Soyuz Airlines	Russia	45	15x Tupolev Tu-204 15x Antonov An-148 10x Antonov An-158 5x Antonov An-168	1110
LAN Airlines	Chile	33	13x Airbus A319-100 20x Airbus A320-200	2452
Air Nostrum	Spain	30	20x Bombardier CRJ1000 10x ATR72-600	1015
Indigo Airlines	India	30	30x Airbus A320-200	2307
Lufthansa	Germany	30	30x Bombardier CS100ER	1572

Table 8-7: Major new aircraft orders by airlines from EU-27

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Operator	Operator Country	Total no. of aircraft ordered in 2008	Type split	Total Order Value in million US-$ at list prices
Wizz Air	Hungary	50	50x Airbus A320-200	3845
Air Nostrum	Spain	30	20x Bombardier CRJ1000 10x ATR72-600	1015
Lufthansa	Germany	30	30x Bombardier CS100ER	1572
Ryanair	Ireland	13	13x Boeing 737-800	998
Alitalia	Italy	10	10x Airbus A320-200	768

Orders for general aviation aircraft

In contrast to the market for regional, short to medium and long-haul aircraft, which are dominated by very few aircraft manufacturers, the market for aircraft used in general aviation is increasingly diverse in both the number of manufacturers and the types and sizes of aircraft available. The market as depicted in Table 8-8 covers a range from the very light jet, with a maximum take-off weight of less than 4000kg for 4-6 passengers, up to the Boeing 747-8BBJ, with a maximum take-off weight of more than 440,000kg and an interior space that can seat more than 500 passengers in a commercial airline configuration.

As in 2008, the business jet market was once again hit harder in 2009 by the economic crisis than the market for commercial aircraft. Overall, orders declined by three-quarters to only 124. Unlike former recessions, this time many billionaires, an important customer group for business jets, were also deeply affected. This resulted in very cautious order behaviour and sometimes also in cancellations. For instance, Boeing lost orders for four 737, one 787 and one 747, which had been ordered as business jets during 2009.

Table 8-8: Orders for Business Jets 2008/2009

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Manufacturer	No. of Business Jets ordered in 2009	No. of Business Jets ordered in 2008	Percentage Change
Hawker Beechcraft	20	105	-81.0%
Bombardier	24	104	-76.9%
Cessna	52	94	-44.7%
Embraer	12	54	-77.8%
Gulfstream Aerospace	5	51	-90.2%
Diamond Aircraft Industries	0	29	-100.0%
Dassault Aviation	2	26	-92.3%
Eclipse Aviation	0	21	-100.0%
Airbus	4	0	-
Boeing	4	0	-
Honda	0	12	-100.0%
Israel Aerospace Industries	0	3	-100.0%
Epic Aircraft	1	0	-
Total	**124**	**499**	**-75.2%**

8.2.2 Aircraft deliveries by market segments, manufacturers and types

In contrast to the sharp decline in orders, the number of aircraft delivered in 2009 increased by 7.2% compared to 2008.

Particularly Boeing had a solid year compared to 2008, when a long-lasting strike decreased the number of delivered aircraft considerably. This explains the increase in deliveries by approximately a third in 2009 compared to 2008.

Table 8-9: Passenger and cargo aircraft deliveries to commercial operators by manufacturer 2008/2009

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

	No. of Aircraft Delivered			Value of Aircraft Delivered at average list prices, in million US-$		
Manufacturer	2009	2008	Percentage Change	2009	2008	Percentage Change
Airbus	480	462	3.9%	49,693	47,912	3.7%
Boeing	468	362	29.3%	53,944	41,443	30.2%
Embraer (incl. Harbin Embraer)	122	161	-24.2%	4,806	6,100	-21.2%
Bombardier	116	113	2.7%	3,667	3,491	5.0%
ATR	48	47	2.1%	926	876	5.6%
Tupolev	4	7	-42.9%	176	308	-42.9%
Ilyushin	3	2	50.0%	102	42	144.2%
Harbin	3	2	50.0%	12	8	50.0%
Antonov	3	0	-	39	0	-
CAIC	3	8	-62.5%	33	48	-31.3%
Aircraft Industries - Let	0	2	-100.0%	0	2	-100.0%
Total	**1250**	**1166**	**7.2%**	**113,363**	**100,230**	**13.1%**

Again, Airbus was the largest aircraft manufacturer in terms of the number of delivered aircraft. In Hamburg, Toulouse and – newly inaugurated in 2009 – Tianjin, a total of 480 aircraft were delivered, outnumbering Boeing's 468.

Table 8-10: Deliveries of Airbus aircraft to commercial operators, breakdown by type

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Aircraft Type	2009	2008	Percentage Change
A318/319/320/321	390	371	5.1%
A330-200/-300	71	69	2.9%
A340-300/-500/-600	9	10	-10.0%
A380	10	12	-16.7%
Total	**480**	**462**	**3.9%**

Table 8-11: Deliveries of Boeing aircraft to commercial operators, breakdown by type

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Aircraft Type	2009	2008	Percentage Change
737NG (-600/-700/-800/-900/-900ER)	361	281	28.5%
747-400F/ERF	8	14	-42.9%
767-300ER	7	7	0.0%
767-300ERF	5	0	-
777-200/200ER/-200LR/-300/-300ER	87	60	45.0%
Total	**468**	**362**	**29.3%**

The ongoing growth of the emerging markets in Asia is also reflected in the number of deliveries. A total of 73 Airbus aircraft were delivered to China in 2008, 27 went to India and 16 to Malaysia. China was also the overall strongest geographical market, followed by operators from Germany with 37 and the United Kingdom with 34 deliveries. The most aircraft delivered to a single operator were 22 for easyJet, followed by 17 to China Eastern and 16 to the Air Asia Group.

Boeing's strongest market for deliveries in 2008 was its home country with 93 aircraft, 44 went to China and 27 each to operators in Japan and Ireland. The largest customers by deliveries were Continental Airlines, which took over 29 Boeing 737s, Ryanair with 27 and Southwest Airlines with 26 new jets delivered from Seattle.

Biggest customers for the third largest aircraft manufacturer Embraer were Compass Airlines from the US with 27 deliveries, followed by Virgin Blue Airlines from Australia with 15 and US Airways with 14 deliveries.

The number of deliveries in the freighter market declined for both Airbus and Boeing. While Airbus, following the cessation of the A300 production, does not currently have any new

freighter aircraft to deliver until the A330-200F enters service in 2010, Boeing did not deliver a single Boeing 767 freighter (down from 3 in 2007) and only 14 747s (down from 16 in 2007).

An important element in the freighter market is also conversions from passenger variants. In 2008, a total of 83 passenger aircraft were converted into freighters. This value is down from 130 one year earlier. The decreased number of conversions is another indicator for the weakened demand in the air cargo market. On average, converted aircraft had an age of 18.3 years. A total of 17 Boeing 747-400 were converted into freighters. While this aircraft is favoured by cargo airlines for the transport of bigger cargo loads it is, in many cases, no longer economical to operate for passenger services. In total, 220 passenger jumbo jets have been converted into freighters in the past.

Table 8-12: Conversions of passenger aircraft into freighters 2009

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Aircraft Type	2009	2008
Airbus A300	3	8
Airbus A310	3	4
ATR 72	3	1
BAe 146	0	1
BAe ATP	0	4
Boeing 737	11	13
Boeing 747	8	17
Boeing 757	16	8
Boeing 767	7	7
Boeing (McDonnell-Douglas) MD-11	4	9
Bombardier CRJ100	0	2
Bombardier Dash 8	1	0
Fokker 50	3	2
Saab 340	3	7
Total	**62**	**83**

Deliveries of business jets

The market for business jets is very heterogeneous and the range of aircraft in this market segment stretches from very light jets with a maximum take-off weight of barely 2000kg up to special customised jets such as the Airbus A319CJ or the Boeing 737BBJ. Occasionally, aircraft manufacturers even receive orders for large intercontinental wide-body jets to be customised as private jets. In 2008, a total of 1271 business jets were produced. This is an increase of 15% compared to 2007. The market leader in the segment of small to medium-sized business jets is the Cessna Aircraft Company, based in Wichita, Kansas. Cessna delivered 450 business jets in 2008, an increase of almost 18% compared to the year before. Eclipse Aviation, engaged in the

market for very light jets, increased its number of deliveries by more than 63% to 160 aircraft, before declaring insolvency in November 2008.

Table 8-13: Business jet deliveries

Source: ASCEND Online Fleets

	No. of Aircraft Delivered		
Manufacturer	2009	2008	Percentage Change
Cessna	291	450	-35.3%
Bombardier	181	232	-22.0%
Embraer	110	36	205.6%
Hawker Beechcraft	92	159	-42.1%
Gulfstream Aerospace	77	85	-9.4%
Dassault Aviation	74	67	10.4%
Israel Aerospace Industries	31	67	-53.7%
Airbus	13	9	44.4%
Boeing	8	6	33.3%
Emivest Aerospace	2	0	-
Eclipse Aviation	1	160	-99.4%
Epic Aircraft	1	0	-
Total	**881**	**1271**	**-30.7%**

8.3 Engine market overview

The drop in new orders for aircraft is also reflected in the statistics for engine manufacturers. The demand for new engines dropped by about 47%, taking into account only the engines to be installed on newly-ordered aircraft, without consideration of spare engines. As the delivery dates for several orders for new aircraft lie rather far ahead in the future, airlines very often do not decide on a certain engine type at the time they order the airframe. In 2008, the number of engines to be installed on new aircraft, where the engine manufacturer is either not yet publicly known or not yet decided, increased by more than 13% to 1176 engines.

Table 8-14: Engine and market share breakdown on aircraft ordered in 2008/2009 (without spare engines)

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Engine Manufacturer	Engines ordered 2009	Engines ordered 2008	Percentage Change	Engine Manufacturer Share of total no. Engines on ordered Aircraft 2009	Engine Manufacturer Share of total no. Engines on ordered Aircraft 2008
CFM International	464	1234	-62.4%	28.5%	44.0%
Pratt & Whitney	320	252	27.0%	19.7%	9.0%
International Aero Engines	266	128	107.8%	16.3%	4.6%
General Electric	238	550	-56.7%	14.6%	19.6%
Rolls Royce	140	438	-68.0%	8.6%	15.6%
Ivchenko	64	88	-	3.9%	3.1%
PowerJet	52	50	4.0%	3.2%	1.8%
Aviadvigatel	50	32	56.3%	3.1%	1.1%
Engine Alliance	16	12	33.3%	1.0%	0.4%
Honeywell	14	16	-	0.9%	0.6%
Walter	4	2	100.0%	0.2%	0.1%
Subtotal Announced Engine Orders	1628	2802	-41.9%	100.0%	100.0%
Unannounced	294	1176	-75.0%		
Total No. of Engines on ordered Aircraft	1922	3978	-51.7%		

The highest number of engines to be installed on newly-ordered aircraft in 2008 comes from CFM with 1234, which represents 44% of all engines to be installed on new aircraft. CFM was able to defend its strong position, as it is the sole supplier of engines for the Boeing 737NG and is in a strong position for the engines to be installed on the Airbus A320 family aircraft, where it competes with the International Aero Engines consortium.

For not only aircraft engine orders but also for aircraft engine deliveries, the CFM International consortium occupies the first rank, with 982 installed engines on aircraft delivered in 2008. This, however, marks a decline of about 10% compared to 2007.

Table 8-15: Engine and market share breakdown on aircraft delivered in 2008/09 (without spare engines)

Source: Analysis of DLR Air Transport and Airport Research based on data provided by Ascend

Engine Manufacturer	Engines delivered			Engine Manufacturer Share of total no. Engines on delivered Aircraft	
	2009	2008	Percentage Change	2009	2008
CFM International	1198	982	22.0%	46.8%	40.8%
General Electric	578	646	-10.5%	22.6%	26.8%
International Aero Engines	304	310	-1.9%	11.9%	12.9%
Pratt & Whitney	252	280	-10.0%	9.9%	11.6%
Rolls Royce	188	152	23.7%	7.3%	6.3%
Engine Alliance	16	16	0.0%	0.6%	0.7%
Aviadvigatel	12	16	-25.0%	0.5%	0.7%
Ivchenko	6	16	-62.5%	0.2%	0.7%
Soloviev	4	0	-	0.2%	0.2%
Total No. of Engines on delivered Aircraft	2558	2406	6.3%	100.0%	100.0%

The list contains a new supplier of aircraft engines: the Engine Alliance consortium. Engine Alliance is a joint venture between General Electric and Pratt & Whitney and builds the GP7200 engine, which is currently available for the Airbus A380. Air France, Emirates and Korean Air have so far chosen this engine for their A380s.

9 Employment in European Air Transport

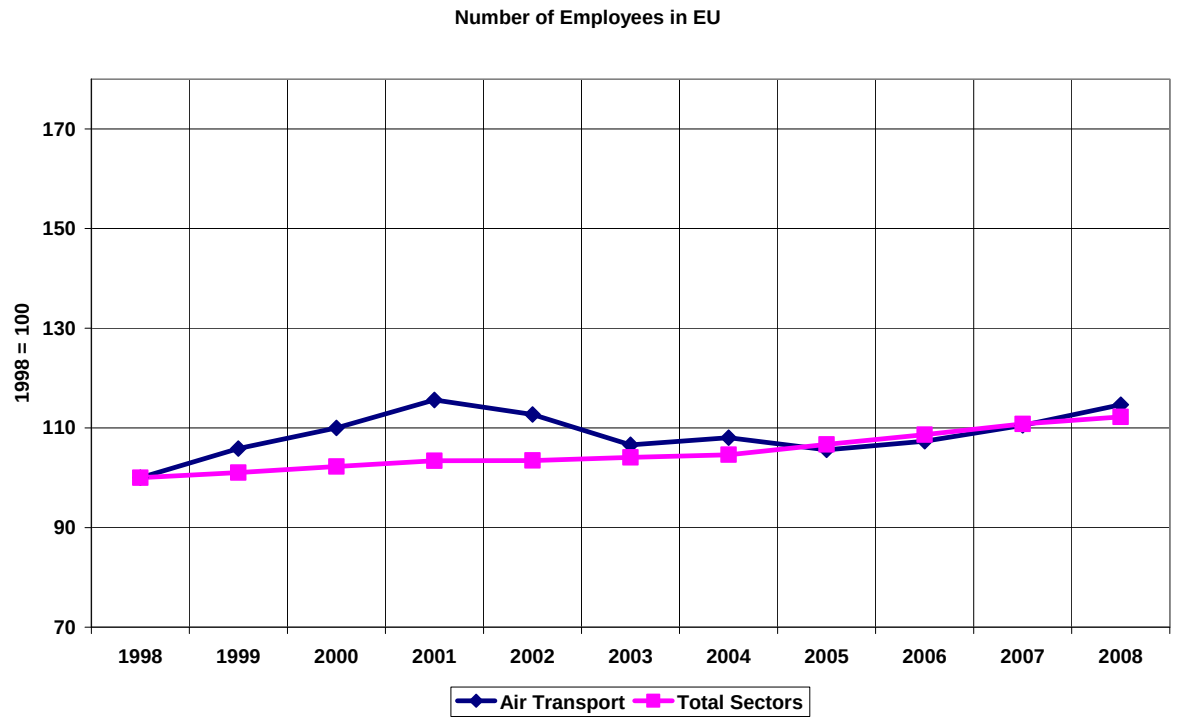
The following analysis of employment trends with respect to the European air transport sector is based on the European Union Labour Force Survey (LFS). Data on employment trends in the economic sector, air transport and the entire national economy have been provided by the Statistical Office of the European Communities (Eurostat) in cooperation with the German Federal Statistical Office. The basic concepts and definitions of the EU Labour Force Survey are described in the report for 2007, as well as the definition of air transport in the scope of National Accounts.

9.1 Employment Trends in European Air Transport

In 2008, the number of employees in the air transportation sector continued to recover from the decrease between the years 2001 and 2005. The absolute number of employees rose by 4% from 440,000 in 2006 to 470,000 in 2008, so that the maximum level of 474,000 employees, seen in 2001, has been reached. Over the last decade, the development of the total number of employees is characterized by a steady increase, resulting in a total gain of 12.2% of jobs since 1998. The air transportation sector was significantly more volatile, but outperformed the total sectors slightly with an increase of 14.6%. Relative to 1998, the proportion of employees in the air transportation sector remains stable at 0.21%.

Figure 9-1: Number of Employees in EU – Air Transport, national Economy

Source: EUROSTAT: Special Analysis of EU Labour Force Survey

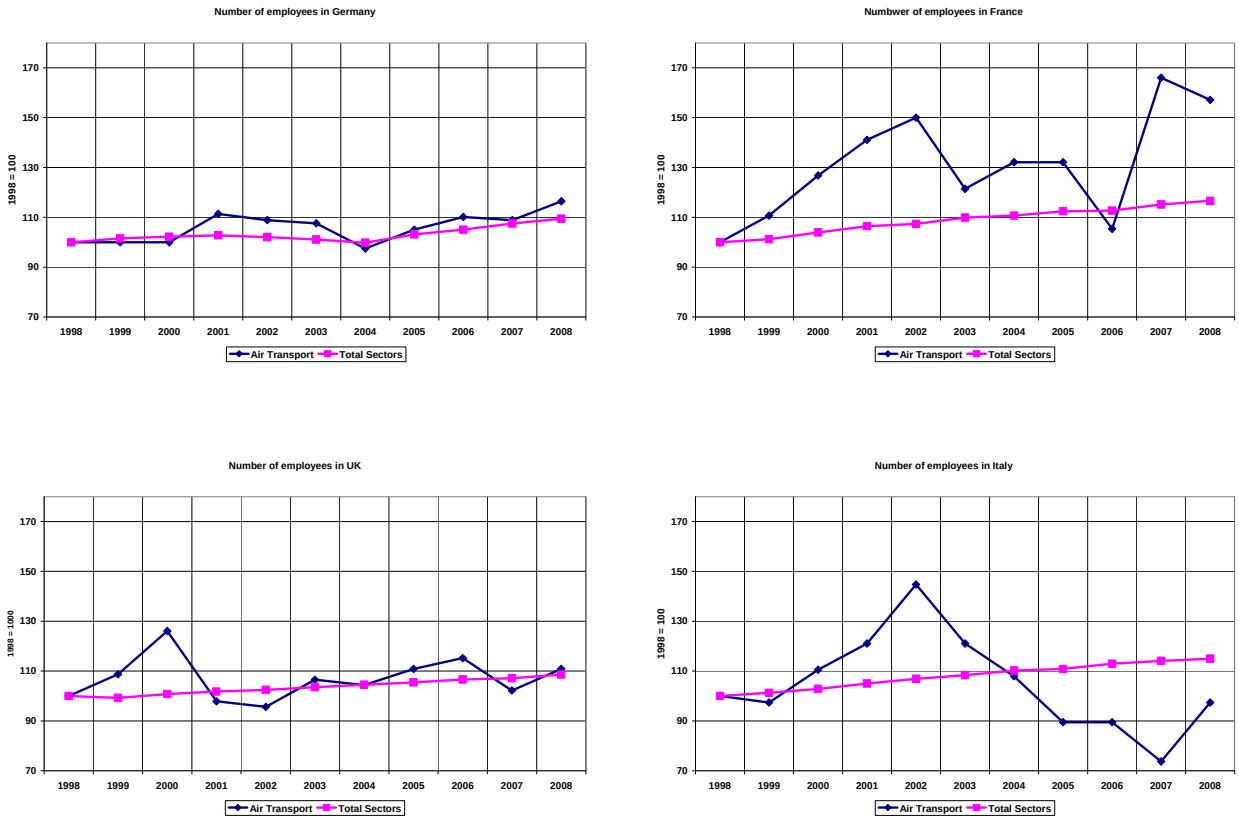


9.2 Employment trends in selected European countries

For a more detailed view on the aggregated numbers, a group of four countries, comprising Germany, France, the United Kingdom and Italy, was selected. In 2008, these four countries accounted for more than half of the total employees of both the air transport and the total sector of employees. While the development of the total number of employees since 1998 is similar for the four selected countries, the development of air transport employees differs significantly. In general, the number of employees in Germany and in the United Kingdom correlated with the total national employment rates. The last year (2008), however, shows a positive trend for both countries, which was bigger than that of the numbers of employees in their total national economies. In Italy, the significant growth over the last decade of total national employees of 15% was accompanied by a reduction of 3% since 1998 in the air transportation sector, with a large growth in the last year. The increase of employees in France considerably outperforms the national as well as the international developments. This situation positively affects the overall European employment rate in the air transport sector. Excluding France from the calculations, the absolute number of employees would have risen by only 8%.

Figure 9-2: Number of Employees in selected European countries – Air Transport, national Economy

Source: EUROSTAT: Special Analysis of EU Labour Force Survey



10 Safety and Security

10.1 Air transport safety

Safe operations remain the most important element of the air transport system. Continuous efforts are undertaken by all stakeholders of the air transport system to guarantee safe operations. This is becoming particularly challenging as airports and airspace have become more crowded in the past years, due to the strong growth in air transport movements. The following chapter provides an overview of notable events in the area of air transport safety in 2009, complemented by statistical data related to safety and by an updated list of airlines banned from EU airspace.

10.1.1 Notable events

In 2009, the number of fatalities in air transport rose, bringing to an end a decreasing trend which started in 2005. The total number of fatalities worldwide amounted to 954, compared to 682 in 2008. The number of hull losses, however, decreased from 102 in 2008 to 73 in 2009.[111]

The geographical distribution of the accidents in 2009 differs considerably from 2008, when the two worst accidents in terms of the number of fatalities occurred in geographical Europe. However, the airline involved in the most serious fatal accident was an EU carrier: the worst accident of the year happened about 1,000km northeast of Fernando de Noronha, Brazil, over the Atlantic, when an Air France Airbus 330-200, operating as flight 447 from Rio de Janeiro to Paris, crashed into the sea on 1st June. All 228 people on board were killed. The investigation of the accident is not yet completed, but is severely hampered by the unavailability of flight data recorders, eyewitness accounts and radar tracks.

The Air France accident was the first of a series of fatal accidents during summer 2009. Only one month later, on 30th June, an Airbus 310 operated by Yemenia also crashed into the sea, off the northern Coast of Grand Comore. The aircraft was on its way from Sana'a, Yemen, to Moroni, Comoros, operating as Yemenia flight 626 and carrying 153 passengers and crew members. One passenger, a 12-year-old girl, was found alive and was able to leave hospital approximately one month later. Likewise, this accident is still under investigation.

The third fatal accident with more than 100 fatalities occurred two weeks later, when a Tupolev 154M belonging to the Iranian carrier Caspian Airlines crashed in an agricultural field about 120km northwest of Tehran. The aircraft, which had taken off from Tehran's Imam Khomenei Airport (IKA) about 16 minutes before the accident, was on its way to Yerevan and had 168

[111] Our figures are based on data provided by aerospace information provider Ascend Worldwide Ltd. An alternative data source is the Jet Airliner Crash Data Evaluation Centre (J.A.C.D.E.C.), which reports 766 fatalities, but does not consider all private, governmental or military services.

passengers and crew members aboard. Only 9 days later, another fatal accident occurred in Iran, when an Aria Air Ilyushin IL-62M coming from Tehran overran the runway at Mashhad airport. 16 of the 153 people on board the aircraft did not survive.

The worst fatal accident in North America happened on 12th February, when a Colgan Air DHC-8-Q400 crashed into a house while on approach to Buffalo airport, NY. 49 people on board the aircraft and one person in the house died. Colgan Air flight 3407 was marketed as a Continental Connection service.

The worst fatal accident in Europe happened two weeks later, when a Turkish Airlines Boeing 737-800 coming from Istanbul with 135 people on board crashed about 1.200 meters short of runway 18R at Amsterdam airport. 6 passengers and 3 crew members died.

In most other fatal accidents, smaller operators in Africa, Latin America, Asia and Russia were involved.

10.1.2 Safety performance

Figure 10-1: Global passenger and crew fatalities in air transport accidents 1999-2009

Source: DLR Analysis based on Ascend Worldwide

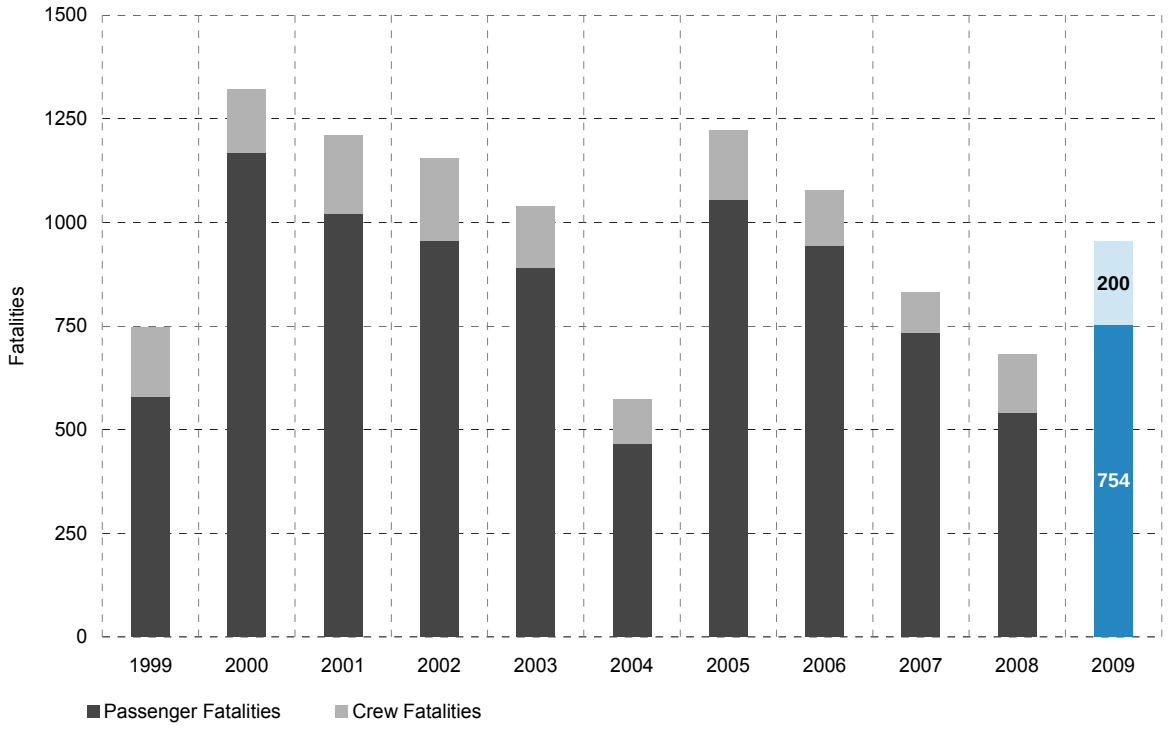


Figure 10-1 shows the long-term development of passenger and crew fatalities in air transport accidents since 1999. Contrary to the years before, 2009 was a relatively unsafe year. 954 people died in air transport accidents globally. This compares to an average of 836 annual

fatalities between 1999 and 2008. Of those people killed in air transport accidents in 2009, 754 were passengers on commercial flights and 200 were crew members or passengers on non-commercial services.

The geographical distribution of fatal accidents in 2009 differs considerably from 2008. While 2009 was, in terms of the total number of fatalities, a negative year for air transport globally, there were relatively few fatal accidents in geographical Europe (in the definition of IATA Regions) and in the European Union where only 6% of all fatalities occurred. However, we have geographically allocated the Air France accident – which alone caused every fourth fatality – to "international airspace" and not to Europe or Latin America. As in the previous years, some countries in Africa (20% of all fatalities), Asia (20%) and the Middle East (21%) remain safety hotspots in the air transport sector.

Figure 10-2: Geographical distribution of air transport accident fatalities in 2009 (IATA regions)

Source: Ascend Worldwide

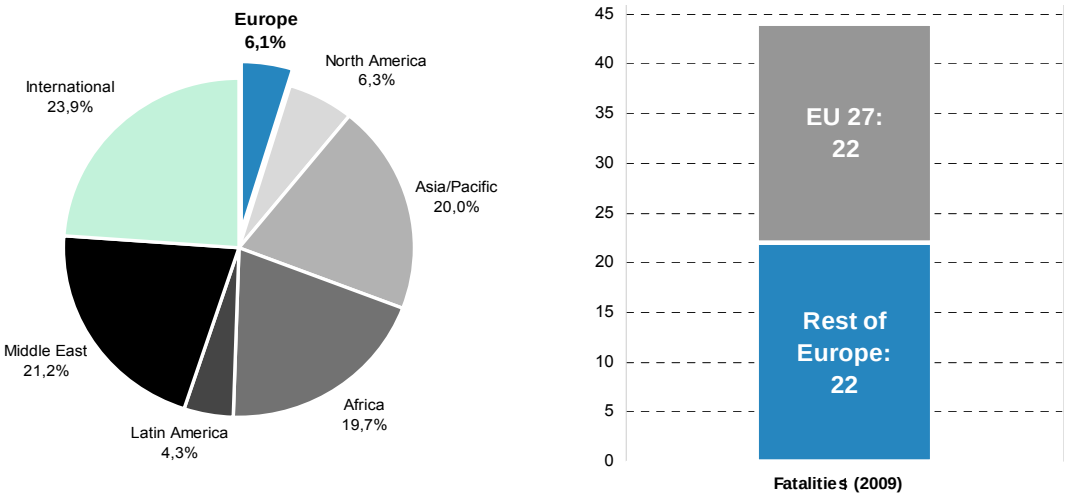


Table 10-1: Air transport accidents with fatalities in 2009 (incl. accidents with governmental and military transport aircraft)

Source: DLR Analysis, based on Ascend Worldwide

Date	Aircraft type	Operator	Fat.	Location	Service
15.01.2009	IL-76	Russian Air Force	4	Makhachkala,Russia	PR
07.02.2009	Embraer 110	Manaus Aero Taxi	24	Manacapuru,Brazil	NP
07.02.2009	Citation III	Air One Executive	2	Trigoria,Italy	F
12.02.2009	Dash 8 Q400	Colgan Air	49	Buffalo,USA	SP
12.02.2009	Falcon 10/100	Laret-Aviation Ltd	2	St. Moritz,Switzerland	PR
15.02.2009	AN-140	Iranian Police Aviation	5	Isfahan,Iran	SY
18.02.2009	DC-3	Colombian Air Force	5	La Dorada,Colombia	T
20.02.2009	AN-12	Aerolift	5	Luxor,Egypt	F
25.02.2009	737-800	Turkish Airlines (THY)	9	Amsterdam, Netherlands	SP
06.03.2009	Hindustan Aeronautics S.	National Aerospace Laboratories	3	Bidadi,India	T
06.03.2009	GAF Nomad	Royal Thai Air Force	1	Lop Buri,,Thailand	PR
09.03.2009	IL-76	Aerolift	11	Magombe,Uganda	NC
23.03.2009	MD-11	FedEx	2	Tokyo,,Japan	SC
31.03.2009	AN-28	Polish Naval Air Arm	4	Gdynia,Poland	PR
06.04.2009	Fokker 27	Indonesian Air Force	24	Bandung,Indonesia	SY
09.04.2009	BAe 146	Aviastar Mandiri	6	Wamena,,Indonesia	NC
29.04.2009	737-200	Bako Air	7	Massamba,Congo	F
10.05.2009	Jetstream 31	Unconfirmed	1	Islas de la Bahia,Honduras	PR
20.05.2009	C-130	Indonesian Air Force	97	Madiun,Indonesia	PR
26.05.2009	AN-26	Service Air	3	Isiro,Congo (Democratic Republic)	NC
01.06.2009	A330-200	Air France	228	in sea,NE of Natal,Brazil	SP
09.06.2009	AN-32	Indian Air Force	13	Rinchi,India	PR
29.06.2009	DHC-6	Aviastar Mandiri	3	Wamena,Indonesia	NC
30.06.2009	A310-300	Yemenia	152	in sea,off Grand Comore Island,Comoros	SP
15.07.2009	TU-154	Caspian Airlines	168	(near) Jannalabad, Iran	SP
24.07.2009	IL-62	Aria Air	16	Mashhad,,Iran	SP
02.08.2009	DHC-6	Merpati Nusantara Airl.	15	Ampisibil,Papua,Indonesia	SP
04.08.2009	ATR 72	Bangkok Airways	1	Koh Samui,Thailand	SP
11.08.2009	DHC-6	Airlines PNG	13	Kokoda,Papua New Guinea	NP
14.08.2009	Beech 99	Skydive Portugal	2	Bairro de Almerim,Portugal	SY
16.08.2009	Jetpod	Avcen Ltd	1	Taiping,Malaysia	T
26.08.2009	AN-12	Aero-Fret Business	6	Brazzaville,Congo	NC
07.09.2009	Nomad	Indonesian Navy	5	Long Apung,Indonesia	PR
22.09.2009	IL-76	Iranian Air Force	7	Vali Abad,Iran	SY
24.09.2009	Jetstream 41	Airlink - SA Airlink	1	Durban,South Africa	F
09.10.2009	Casa 212	Uruguayan Air Force	11	20km W of Fond-Verrettes,Haiti	SY

Date	Aircraft type	Operator	Fat.	Location	Service
09.10.2009	Casa 212	Uruguayan Air Force	11	20km W of Fond-Verrettes,Haiti	SY
21.10.2009	B707-300	Azza Transport Company	6	Sharjah,United Arab Emirates	SC
26.10.2009	HS-125	S-Air	5	Minsk,Belarus	PR
29.10.2009	C-130	US Coast Guard	7	24km East of San Clemente Island, USA	R
01.11.2009	IL-76	Ministry of the Interior	11	Mirnyj, Russia	F
02.11.2009	AN-28	Indonesian Police	4	Mulia,Indonesia	PR
09.11.2009	Beech 1900	Blue Bird Aviation	2	Nairobi,Kenya	NC
12.11.2009	CRJ Regional Jet	RwandAir	1	Kigali,Rwanda	SP
23.11.2009	C-130	Italian Air Force	5	Coltano,Italy	T
27.11.2009	MD-11	Avient Aviation	3	Shanghai,China	SC
05.12.2009	Learjet 35	Royal Air Freight	2	Chicago,USA	NC
17.12.2009	Falcon 20/200	Aviation Team Inc	2	Great Inagua Island,Bahamas	PR
		Sum	**954**		

Service types

SP	scheduled passenger	F	ferry	R	rescue
NP	non-scheduled passenger	PR	private/business/governmental	M	medical
SC	scheduled cargo	SY	survey / patrol, photographic	NO	non operational
NC	non-scheduled cargo	T	test		

Damages and hull loss statistics

Besides the tragic loss of human lives, air transport accidents are usually associated with high material damages for airlines, insurance companies and third parties. In 2009, the total amount of hull losses and liabilities amounted to US$ 2.343bn according to aircraft insurance analysts Aon[112]. This compares to US$ 1.451bn for the preceding year. Insurance premiums amounted to US$ 1.9bn and could therefore not fully cover the losses. The following table provides a recount of the most expensive accidents in 2009 in terms of material damage.

[112] AON, airline insurance market news, January 2010, London.

Table 10-2: Accidents with highest monetary aircraft damages in 2009

Source: Ascend Worldwide

Date	A/C Type	Operator	Fatalities	Damage in US-$ (est.)	Accident Location
01.06.2009	A330-200	Air France	228	68,100,000	NE of Natal, Brazil
23.03.2009	MD-11	FedEx	2	45,300,000	Narita International Airport, Tokyo, Japan
27.11.2009	MD-11	Avient Aviation	3	31,500,000	Pudong International Airport, Shanghai, China
25.02.2009	B737-800	Turkish Airlines	9	30,900,000	(near) Schiphol Airport, Amsterdam, Netherlands
15.01.2009	A320-200	US Airways	0	25,650,000	Hudson River, New York, USA
22.12.2009	B737-800	American Airlines	0	25,250,000	Norman Manley International Airport,Kingston, Jamaica
12.02.2009	Dash 8-400	Colgan Air	49	19,650,000	Clarence Center, New York, USA
20.03.2009	A340-500	Emirates Airline	0	17,820,000	Melbourne International Airport, Melbourne, Australia
10.11.2009	ATR 72-500	Kingfisher Airlines	0	14,350,000	Chhatrapati Shivaji International Airport, Mumbai, India
04.08.2009	ATR 72-500	Bangkok Airways	1	10,400,000	Koh Samui Airport, Koh Samui, Thailand

10.1.3 List of airlines banned within the EU

Based on Regulation (EC) No 2111/2005, which came into force in January 2006, the European Commission, in close cooperation with the authorities responsible in the Member States, has the right to ban operators from operating in EU airspace should international safety standards be violated. The list is not only used in Europe, but also by the civil aviation authorities in Japan and Saudi-Arabia. In 2009, this list was updated three times.

On 8th April 2009, the 10th update of the list was adopted[113]. New companies on which an operating ban was imposed were Air Company Kokshetau, ATMA Airlines, Berkut Air, East Wing, Sayat Air and Starline KZ from Kazakhstan, One Two Go Airlines from Thailand, Ukrainian carrier Motor Sich Airlines and all airlines certified in the Republic of Benin. The decision to ban

[113] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:095:0016:0036:EN:PDF

all carriers from Benin was based on negative results of an audit by the International Civil Aviation Organisation (ICAO), which took place in the African country.

At the same time, the European Commission revealed that considerable but insufficient improvements were noticable with regard to the safety situation in Angola and Indonesia. Therefore, the respective bans imposed on all carriers from these two countries were not lifted for the time being.

Three months later, on 14th July 2009, the European Commission updated the list for the 11th time[114] and announced its decision to lift the ban imposed on four Indonesian carriers, namely Garuda Indonesia, AirFast Indonesia, Mandala Airlines and Premiair, following improvements and accomplishments of the Indonesian civil aviation authority. The ban on all other Indonesian operators, however, remained at that time. Thai low-cost carrier One Two Go, which had been involved in a fatal crash in Phuket in 2007, was removed from the list as its air operator certificate had been revoked by the Thai aviation authorities. All carriers from Angola remained on the list, but due to safety improvements made by the civil aviation authority of Angola and the air carrier TAAG Angola Airlines, the latter was allowed to recommence services into Portugal with certain aircraft and under very strict conditions.
On the other hand, significant safety concerns identified by ICAO in Zambia and Kazakhstan led to an operating ban on all carriers from these two countries, with the exception of the Kazakh airline Air Astana, whose EU operations were frozen under strict restrictions.

On 26th November 2009, the 12th update of the list was adopted[115]. Following a visit to Ukraine, the European Commission removed the Ukrainian carrier Motor Sich from the list and allowed Ukrainian Mediterranean Airlines to resume EU-operations using one specific aircraft. Ukraine Cargo Airways and Volare were also removed from the list as their operating certificates had been revoked by the Ukrainian authorities. The EU could also take stock of significant progress made in Angola to progressively resolve any remaining safety deficiencies. Consequently, TAAG Angola Airlines was allowed to use additional aircraft on its services into Lisbon.
The November update also highlights the continuous dialogue between the EU and certain states regarding air transport safety and safety oversight. Improving cooperation and progress could be monitored with Albania, Angola, Egypt, the Russian Federation, Ukraine, Kazakhstan and Kyrgyzstan. The EASA requested audit visits to further evaluate the safety situation of authorities and companies in Albania, Egypt, Kyrgyzstan and Yemen.
Nevertheless, the European Commission also announced its decision to extend the list by adding all air carriers certified in Djibouti, the Republic of Congo and Sao Tome and Principe due to significant safety concerns identified by ICAO.

At year's end, all carriers from fifteen countries were banned from EU airspace, namely: Angola (with the exception of TAAG's operating under restrictions and conditions), Benin, the

[114] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:182:0004:0024:EN:PDF
[115] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:312:0016:0037:EN:PDF

Democratic Republic of Congo, Djibouti, Equatorial Guinea, Gabon (except for selected aircraft of Gabon Airlines, Afrijet and Nouvelle Air Affaires Gabon), Indonesia (with the exception of Garuda Indonesia, AirFast,Indonesia, Manadal Airlines, Ekspres Tranaportasi Antarbenua), Kazakhstan (with the exception of Air Astana operating under restrictions and conditions), Kyrgyzstan, Liberia, the Republic of Congo, Sierra Leone, Sao Tome and Principe, Swaziland and Zambia.
In addition, five individual carriers from other countries are fully banned in the European Union, namely: Air Koryo from the Democratic People's Republic of Korea, Air West from Sudan, Ariana Afghan Airlines from Afghanistan, Siem Reap Airways International from Cambodia and Silverback Cargo Freighters from Rwanda.
Finally, three more carriers – apart from those mentioned above – are only allowed to operate under certain restrictions and conditions. These are: Air Bangladesh, Air Service Comores and Ukrainian Mediterranean Airlines.

In January 2010, the European Commission published a report on the application of Regulation (EC) No 2111/2005 as required under Article 14 of the said Regulation[116]. The application of the list of banned carriers has demonstrated that it is a successful tool in contributing to ensure a high level of safety in the European Union and worldwide. There are, however, a number of areas where the European Commission intends to further develop its policy.

10.1.4 Reform of air accident investigation legislation

Drawing on the experience gained over the 15 years since the Directive **94/56/EC of** 1994 came into force, in October 2009 the European Commission brought forward proposals to update the current legal framework for air accident investigations. The main aims of the proposal are to strengthen the implementation of safety recommendations, build investigation capacity in Member States; clarify the roles of different institutions involved in investigation (in particular of EASA) and strengthen the rights of victims and families.[117]

10.1.5 The European Community SAFA Programme

The "SAFA (Safety Assessment of Foreign Aircraft) Directive" (Directive 2004/36/EC) provides a legal requirement for EU Member States to perform ramp inspections on third-country aircraft landing at airports located in the Member States. Inspections are performed by the Member States, and all reported data is stored centrally in a computerised database set up by EASA. The prioritisation of these ramp inspections on aircraft using Community airports is ruled in Commission Regulation (EC) No 351/2008 which implements Directive 2004/36/EC.

On January 1st 2008, Albania was the 15th non-EU country to join the SAFA-programme in a Working Agreement, bringing the total number of participating states to 41.

[116] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52009DC0710:EN:HTML
[117] http://ec.europa.eu/transport/air/safety/accident_investigation_en.htm

In November 2009, the European Commission published its report on the European Union SAFA programme for the year 2008[118]. According to this report, 10,337 aircraft inspections on 1,067 operators of 131 states were performed in 2008, leading to 11,298 findings. This equals 1.093 findings per inspection, compared to 1.4 findings per inspection in 2007. In 1,407 cases, corrective action had to be undertaken before flight authorisation was given, while 14 aircraft were grounded.

In April 2009, the European Commission decided to send a reasoned opinion to Italy and Luxembourg for failure to notify the laws, regulations or administrative provisions necessary to comply with Directive 2008/49/EC[119]. This Directive guarantees a high and uniform level of safety in European civil aviation. It harmonises the rules and procedures for ramp inspections of third-country aircraft landing at airports located in the Member States and foresees possible measures to be taken by a Member State against aircraft and/or their operators which may prove to be unsafe following such inspections. The Directive also provides for harmonised rules on the training and qualification of inspecting personnel. The Member States failed to inform the Commission of measures implementing the Directive, which resulted in the Commission initiating the second stage of an infringement procedure under Article 226 of the Treaty.

In July 2009, EASA published guidance material for SAFA ramp inspections[120] in order to harmonise the procedures of ramp inspections throughout all participating states.

10.1.6 European Aviation Safety Agency (EASA)

The European Aviation Safety Agency is, in addition to the European Commission and the Member States, another centrepiece of the European Union's strategy for aviation safety. The aim is to promote the highest common standards of safety and environmental protection in civil aviation at the European level.
As a Community body, EASA provides the Commission with all the technical expertise it requires and assists it in exercising its legislative and regulatory tasks. The Agency prepares technical opinions which form the basis of the legislative proposals of the Commission. EASA is also responsible for carrying out standardisation inspections for monitoring the uniform application of Community legislation in Member States, evaluating its effects and making the necessary recommendations. In the EU, certificates and approvals attesting that products and organizations comply with the common rules are issued either by the competent national authorities of the Member States or by EASA. EASA has been entrusted with the responsibility of

[118] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0627:FIN:EN:PDF
[119] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/577&format=HTML&aged=0&language=EN&guiLanguage=en
[120] http://easa.europa.eu/ws_prod/g/doc/Agency_Mesures/Agency_Decisions/2009/ED%20Decision%202009-001-S.pdf

issuing certificates in lieu of Member States when it has been considered more efficient. For instance, EASA is entirely responsible for the certification of aircraft types and other products. EASA also issues certificates for organizations located in third countries.

The agency works hand-in-hand with the national authorities who continue to carry out many operational tasks, such as certification of individual aircraft or licensing of pilots. The national authorities of the Member States continue, however, to issue individual certificates for aircraft and issue approvals for most organizations located in their territory, on the basis of common rules and under EASA monitoring. Such certificates are issued on the basis of common, directly applicable safety standards and are mutually recognized across the Community without any further checks, which guarantees uniform levels of safety for the travelling public and a level playing field for the commercial operators across the EU.

In July 2009, the Joint Aviation Authorities (JAA) ceased their activities and the remaining activities were integrated into EASA's activities, building on the experience and cooperation of this former group of European aviation regulators.

In December 2009, Regulation (EC) No 1108/2009121 amending Regulation (EC) No 216/2008 in the field of aerodromes, air traffic management and air navigation services and repealing Directive 2006/23/EC entered into force. This Regulation extends the tasks of EASA in the field of aerodromes, air traffic management (ATM) and air navigation services (ANS) in order to increase safety standards through a harmonised, holistic regulatory approach across the Member States.

With a view towards a 'total system approach', the common aviation safety rules and the corresponding responsibilities of EASA have been extended for a second time. These newly-acquired competences will be gradually exercised with the adoption of the related implementing rules until 2013. These aviation safety implementation rules for the second extension shall be adopted by the European Commission on the basis of technical opinions issued by EASA by the end of 2012 (ATM/ANS) and 2013 (aerodromes) respectively.

During the year 2009, the Agency published proposed measures covering a large part of the first extension, while at the same time work was initiated on the implementation measures addressing third-country operators, as well as the second extension of competences. Moreover, already established legislation in the field of airworthiness and environmental protection was reviewed.

In order to prioritise preparatory work, a common position of the Commission and EASA guiding the EASA rulemaking activities in the context of the extension of competences in a coordinated approach was published in September 2009. It sets out priorities and principles for the extension

[121] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0051:0070:EN:PDF

of the Agency's responsibilities in the areas of flight crew licensing, air operations and third-country operators as well as in the field of ATM/ANS and aerodromes. Following EASA's Notices of Proposed Amendments and comments of stakeholders, the common position intends to amend and simplify the Agency's initial proposals in a number of areas.

The development of the measures in the field of aerodromes and ATM/ANS will benefit from the experience and principles established for the first extension to ensure a smooth transition in close coordination with the Commission. It is also important for the Agency to have the necessary time and resources to communicate extensively with the stakeholder community during the process.

In July 2009, EASA published the Annual Safety Review 2008[122] to inform the public of the general safety level in the field of civil aviation. It contains statistics for European and worldwide civil aviation safety.

In June 2009, the annual Europe/US International Aviation Safety Conference took place in Athens. The conference aims to promote cooperation and mutual recognition of safety standards and achieve a more harmonised implementation of rules, as well as eliminating global disparity.

In February and December 2009, the Rulemaking Programmes for 2009-2012 and 2010-2013 were adopted.[123]
In 2009 and in accordance with the agency's rule-making procedure, five opinions were submitted to the European Commission[124]. All other agency measures[125] according to Article 18 of the Basic Regulation and notices of proposed amendments (NPAs) are compiled on the EASA website[126].

10.1.7 EU aviation safety regulations

Several Commission Regulations were adopted in 2009, updating or complementing the existing EU aviation safety regulations:

Commission Regulation (EC) No 690/2009[127] was adopted, on the basis of an EASA opinion, in order to comply with the new environmental protection requirements of Annex 16 to the Chicago Convention.

[122] http://www.easa.europa.eu/essi/documents/AnnualSafetyReview2008_en.pdf
[123] http://easa.europa.eu/ws_prod/r/r_app.php
[124] http://easa.europa.eu/ws_prod/g/rg_opinions_main.php#2009
[125] http://www.easa.eu.int/ws_prod/g/rg_agency_measures.php
[126] http://www.easa.eu.int/ws_prod/r/r_npa.php
[127] http://www.easa.europa.eu/ws_prod/g/doc/Regulation/reg_690_2009/reg_690_2009.pdf

Commission Regulation (EC) No 1194/2009[128], amending Regulation (EC) No 1702/2003 and laying down implementation rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for certification of design and production organisations, was adopted. In order to maintain a high uniform level of aviation safety in Europe and as an update for technical requirements and administrative certification procedures, this regulation introduces the definition of the concept of principal place of business, improves the content of the Authorised Release Certificate 'EASA Form 1' and revises the provisions on permit to fly.

In May 2009, the Commission welcomed the final recommendations and the action plan issued by the European Aviation Safety Agency's Management Board following the external evaluation on the implementation of Regulation 216/2008[129]. Furthermore, the European Commission also supported the corresponding remedial actions proposed by the Management Board.

10.2 Air transport security

Air security aims at the prevention of illegal acts in the field of aviation. As seen in recent decades, air transport is a strategic target for terrorists and for terrorist organisations. To protect the travelling public, citizens and businesses and to maintain the confidence in secure and safe air transport, control techniques and procedures are necessary despite all inconveniences. The Commission has a key role to play in establishing security standards and controlling the correct and full implementation of these measures at all Community airports through a system of inspections. Facilitation is a permanent challenge for the work at the European level to replace the current restrictions. Therefore, significant improvements are expected from a new generation of screening equipment, for example new technologies for detecting dangerous liquids. The recent adoption of a framework regulation for civil aviation security has created better possibilities for simplifying rules and for phasing out some duplication.

Europe's internal one-stop security system means that passengers departing from an EU airport do not need to undergo additional controls if they connect at another EU airport for the second part of their journey. It is intended that this system be extended to flights to non-EU countries.

[128] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:321:0005:0035:EN:PDF
[129] http://www.europarl.europa.eu/meetdocs/2009_2014/documents/com/com_c(2009)3220_/com_c(2009)3220_en.pdf

10.3 EU security regulations

10.3.1 Commission Regulation (EC) No 272/2009

In April 2009, the Commission adopted Commission Regulation (EC) No 272/2009[130] supplementing the common basic standards on civil aviation security defined in the Annex to Regulation (EC) No 300/2008 in order to

- allow methods of screening (Part A of the Annex),
- grant access to airside and security restricted areas as well as other security controls (Parts C, D, F, G and H of the Annex),
- prohibit categories of articles (Part B of the Annex),
- establish criteria for recognising the equivalence of security standards of third countries (Part E of the Annex),
- establish criteria applicable for the recruitment of personnel and methods of training (Part J of the Annex),
- determine the conditions under which special security procedures or exemptions from security controls may be applied and the circumstances for the use of special security procedures (Part K of the Annex).

These general measures are necessary in order for civil aviation security in the Community to reach a level which meets that defined in Regulation (EC) No 300/2008.

10.3.2 Commission Regulation (EC) No 483/2009

In June 2009, the Commission adopted Commission Regulation (EC) No 483/2009131 in order to amend Regulation (EC) No 820/2008 laying down measures for the implementation of the common basic standards on aviation security. In order to find better ways of addressing the threat from liquid explosives at international level and to avoid inconvenience to the passengers as well as certain operational difficulties at airports, the Commission has verified certain security standards at airports in specific third countries and has decided to take steps to alleviate the problems identified above in the case of passengers carrying liquids obtained at named airports in those countries.

10.3.3 Council Decision 2009/97/EC

In addition to meetings at international level in order to share best practice, pool expertise and find global solutions to security problems and therefore to strengthen the cooperation with international partners, the Community has reached an agreement with ICAO on a Memorandum of Cooperation on inspections, with a view to reducing ICAO inspections in

[130] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:091:0007:0013:EN:PDF
[131] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:145:0023:0024:EN:PDF

Europe, already covered by national and the Commission's own inspection programmes. In February 2009, Council Decision 2009/97/EC[132] was published in the Official Journal of the European Union.

10.3.4 Financing aviation security

The costs for aviation security have increased over recent years, while a security charge is defined as "a charge serving solely to compensate all or part of the costs for security measures to protect civil aviation against unlawful intervention". The issue of financing aviation security has been raised regularly during discussions on aviation security measures. Member States generally take the view that the industry should meet the costs, with the freedom to pass them on to passengers, while the industry argues for a greater State contribution.

In May 2009, the Commission adopted a proposal for a Directive on aviation security charges[133]. In February 2009, the Commission had already published a report on financing aviation security[134] in accordance with the new framework Regulation (EC) No 300/2008. Although Community law already covers other major fees levied on airlines at an airport, security charges are the only airport fees not regulated at Community level. Aviation security at European airports is essentially a state responsibility and each Member State decides on the methods for financing aviation security. It is therefore necessary to establish a common framework in order to create a level playing field for airports, air carriers and passengers.

In order to achieve these aims, the proposal defines the common principles for levying security charges at Community airports as the following:

- Non-discrimination (Article 3)
- Consultation (Article 4)
- Transparency in security charges (Article 5)
- Cost-relation of security charges (Article 7)
- Establishment of independent supervisory authority (Article 8).

The proposal is now in the legislative procedure.

10.3.5 Report on Regulation (EC) No 2320/2002

In October 2009, the Commission published the fourth report on the implementation of Regulation (EC) No 2320/2002[135]. The report summarises the results of inspections, trials, studies and pilots, mentions dialogue with international bodies and third countries, and gives a perspective on the future work.

[132] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:036:0018:0021:EN:PDF
[133] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0217:FIN:EN:PDF
[134] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0030:FIN:EN:PDF

10.3.6 Ban on liquids

In 2009, carrying liquids in hand luggage was still being debated and led to increased efforts to collaborate with manufacturers and international partners in the development of security screening procedures.

The ban on liquids on board aircraft is set to expire in April 2010. Security threats are expected to continue to exist after that date. Therefore, the ban needs to be prolonged and can be phased out only in steps. The European Commission suggested a two-step approach, first replacing the confiscation of tax-free liquids bought outside the EU by screening from 2011 and then expanding the screening to all liquids in 2013.

[135] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0518:FIN:EN:PDF

11 Annex

11.1 Abbreviations

€	Euro
ACARE	Advisory Council for Aeronautics Research in Europe
AEA	Association of European Airlines
ASK	available seat kilometre
ATFCM	Air Traffic Flow and Capacity Management
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
BAA	British Airport Authority
ca.	circa
CAEP	Committee on Aviation Environmental Protection (of the → ICAO)
CASS	Cargo Accounts Settlement System
CFMU	Central Flow Management Unit
CIS	Commonwealth of Independent States
CO_2	Carbon Dioxide
DHS	U.S. Department of Homeland Security
DLR	Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center)
EASA	European Aviation Safety Agency
e.g.	exempli gratia
EC	European Community
ECC-Net	European Consumer Centre Network
EEA	European Economic Area
ERA	European Regions Airline Association
etc.	et cetera
EU	European Union
EU-ETS	EU Emissions Trading Scheme
EUR	Euro
FAA	Federal Aviation Authority (of the USA)
FSNC	Full Service Network Carrier
FTK	freight tonne kilometre
GVA	gross value added
i.e.	id est
IATA	International Air Transportation Association
ICAO	International Civil Aviation Organisation
IEDO	Intra-European and Domestic (Flights)
IFR	Instrument Flight Rules
IMF	International Monetary Fund
JPY	Japanese yen

Kb	Kilo Byte
LCC	Low Cost Carrier
LTO	landing and take-off phase of a flight
NEB	National Enforcement Body
No	Number
NO_x	Nitrogen Oxide
OEM	original equipment manufacturer
Pax	Passenger
pkm	passenger kilometre
PNR	Passenger Name Record
PRC	People's Republic of China
PSO	Public service obligation
RPK	revenue passenger kilometre
TFCs	taxes, fees and charges
TFTK	total freight tonne kilometre
TOM	territoires d´outre-mer
UAS	Unmanned aircraft systems
UK	United Kingdom
USA	United States of America
USD, US$	United States dollar
VLJ	Very Light Jet

11.2 Geographical Coverage Information

	European Union			European Economic Area	EUROCONTROL Statistical Reference Area	International Civil Aviation Organization (Europe)
	EU 25	EU 27	EU Candidate Countries	EEA	ESRA	ICAO Europe
composition valid from	*2004*	*2007*	*actual*	*1994*	*2002*	
Albania						x
Algeria						x
Andorra						x
Armenia						x
Austria	x	x		x	x	x
Azerbaijan						x
Belarus						x
Belgium	x	x		x	x	x
Bosnia and Herzegovina						x
Bulgaria		x		x	x	x
Croatia			x		x	x
Cyprus	x	x		x	x	
Czech Republic	x	x		x	x	x
Denmark	x	x		x	x	x
Estonia	x	x		x		x
Finland	x	x		x	x	x
France	x	x		x	x	x
Georgia						x
Germany	x	x		x	x	x
Greece	x	x		x	x	x
Hungary	x	x		x	x	x
Iceland				x		x
Ireland	x	x		x	x	x
Italy	x	x		x	x	x
Kazakhstan						x
Kyrgyzstan						x
Liechtenstein				x		
Latvia	x	x		x		x
Lithuania	x	x		x		x
Luxembourg	x	x		x	x	x
Malta	x	x		x	x	x
Moldova					x	x
Monaco						x
Montenegro						x
Morocco						x
Netherlands	x	x		x	x	x
Norway				x	x	x
Poland	x	x		x		x
Portugal	x	x		x	x	x
FYR Macedonia			x		x	x
Romania		x		x	x	x
Russian Federation						x
San Marino						x
Serbia						x
Slovakia	x	x		x	x	x
Slovenia	x	x		x	x	x
Spain	x	x		x	x	x
Sweden	x	x		x	x	x
Switzerland					x	x
Tajikistan						x
Tunisia						x
Turkey			x		x	x
Turkmenistan						x
Ukraine						x
United Kingdom	x	x		x	x	x
Uzbekistan						x

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DLR at a glance

DLR is Germany´s national research centre for aeronautics and space. Its extensive research and development work in Aeronautics, Space, Energy, Transport and Security is integrated into national and international cooperative ventures. As Germany´s space agency, DLR has been given responsibility for the forward planning and the implementation of the German space programme by the German federal government as well as for the international representation of German interests. Furthermore, Germany's largest project-management agency is also part of DLR.

Approximately 6,700 people are employed at thirteen locations in Germany: Cologne (headquarters), Berlin, Bonn, Braunschweig, Bremen, Goettingen, Hamburg, Lampoldshausen, Neustrelitz, Oberpfaffenhofen, Stuttgart, Trauen, and Weilheim. DLR also operates offices in Brussels, Paris, and Washington D.C.

DLR's mission comprises the exploration of the Earth and the Solar System, research for protecting the environment, for environmentally-compatible technologies, and for promoting mobility, communication, and security. DLR's research portfolio ranges from basic research to innovative applications and products of tomorrow. In that way DLR contributes the scientific and technical know-how that it has gained to enhancing Germany's industrial and technological reputation. DLR operates large-scale research facilities for DLR's own projects and as a service provider for its clients and partners. It also promotes the next generation of scientists, provides competent advisory services to government, and is a driving force in the local regions of its field centers.

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