

ANALYSIS OF THE EU AIR TRANSPORT INDUSTRY

Final Report 2005

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Glossary

Abbreviations, Acronyms and Codes

Aviation Organisations

ACI	Airports Council International (formerly AACI)
AEA	Association of European Airlines
AFTN	Aeronautical Fixed Telecommunications Network
AOA	Airports Operators Association
ARINC	Aeronautical Radio Incorporated
BV	Bureau Veritas (France)
CAA	Civil Aviation Authority
CCA	Conference of City Airports
DOT	Department of Transportation (US)
ECAC	European Civil Aviation Conference
ERA	European Regional Airlines Association
FAA	Federal Aviation Administration (US)
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation (also known as OACI in French)
INMARSAT	International Maritime Satellite Organisation
JAA	Joint Aviation Authorities
LBA	Luftfahrt Bundesamt (Germany)
NATS	National Air Traffic Services (UK)
NTSB	National Transportation Safety Board
OAA	Orient Airlines Association
OAG	Official Airline Guide
RAI	Registro Aeronautico Italiano
RTCA	Radio Technical Commission for Aeronautics
SITA	Société Internationale de Télécommunications Aéronautique

Units of Measurement

ASK	Available Seat-Kilometre
ATK	Available Tonne-Kilometre
ATM	Air Transport Movement
FTK	Freight Tonne-Kilometre
LF	Load Factor
MTOW	Maximum Take-Off Weight
PAX	Passengers
RPK	Revenue Passenger-Kilometre
RTK	Revenue Tonne-Kilometre

Airports

ACI	Airports Council International (formerly AACI)
ATB	Automated Ticket and Boarding pass
BAA	former British Airports Authority
FIDS	Flight Information Display Systems

Country codes

Listed below are the thirty-two countries forming the core group for analysis in this report. They are defined by the twenty-five EU Member States, four accession and candidate states and three EFTA members.

code	country	code	country
AT	Austria	IE	Ireland
BE	Belgium	IS	Iceland
BG	Bulgaria	IT	Italy
CH	Switzerland	LT	Lithuania
CY	Cyprus	LU	Luxembourg
CZ	Czech Republic	LV	Latvia
DE	Germany	MT	Malta
DK	Denmark	NL	Netherlands
EE	Estonia	NO	Norway
ES	Spain	PL	Poland
FI	Finland	PT	Portugal
FR	France	RO	Romania
GB	United Kingdom	SE	Sweden
GR	Greece	SI	Slovenia
HR	Croatia	SK	Slovakia
HU	Hungary	TR	Turkey

Notwithstanding the definition of Europe in the previous paragraph, some sources of data used in this report employ quite different definitions. In the table below, countries represented as members states, contracting states or represented by airline members of international organisations are listed.

EU					ACI Europe	AEA	ECAC	Euro-control	IATA Europe	ICAO Europe
Member States	candidate states	EEA	EFTA							
				Albania	✓		✓	✓		✓
				Algeria						✓
				Andorra	✓					✓
				Armenia	✓		✓	✓		✓
✓		✓		Austria	✓	✓	✓	✓	✓	✓
				Azerbaijan	✓		✓			✓
				Belarus	✓					✓
✓		✓		Belgium	✓	✓	✓	✓	✓	✓
				Bosnia & Herzegovina	✓		✓	✓		✓
	✓			Bulgaria	✓		✓	✓	✓	✓
	✓			Croatia	✓	✓	✓	✓	✓	✓
✓		✓		Cyprus	✓	✓	✓	✓	✓	♦
✓		✓		Czech Republic	✓	✓	✓	✓	✓	✓
✓		✓		Denmark	✓	✓	✓	✓	✓	✓
✓		✓		Estonia	✓		✓		✓	✓
✓		✓		Finland	✓	✓	✓	✓	✓	✓
✓		✓		France	✓	✓	✓	✓	✓	✓
				FYR Macedonia	✓		✓	✓		✓
				Georgia	✓		✓			✓
✓		✓		Germany	✓	✓	✓	✓	✓	✓
✓		✓		Greece	✓	✓	✓	✓	✓	✓
✓		✓		Hungary	✓	✓	✓	✓	✓	✓
		✓	✓	Iceland	✓	✓	✓		✓	✓
✓		✓		Ireland	✓	✓	✓	✓	✓	✓
				Israel	✓				✓	
✓		✓		Italy	✓	✓	✓	✓	✓	✓
				Kazakhstan						✓
				Kyrgyzstan						✓
✓		✓		Latvia	✓		✓		✓	✓
		✓	✓	Liechtenstein	✓				✓	✓
✓		✓		Lithuania	✓		✓		✓	✓
✓		✓		Luxembourg	✓	✓	✓	✓	✓	✓
✓		✓		Malta	✓	✓	✓	✓	✓	✓
				Moldova	✓		✓	✓		✓
				Monaco	✓		✓	✓		✓
				Morocco						✓
✓		✓		Netherlands	✓	✓	✓	✓	✓	✓
		✓	✓	Norway	✓	✓	✓	✓	✓	✓
✓		✓		Poland	✓	✓	✓	✓	✓	✓
✓		✓		Portugal	✓	✓	✓	✓	✓	✓
	✓			Romania	✓	✓	✓	✓	✓	✓
				Russian Federation	✓				✓	✓
				San Marino	✓					✓
				Serbia & Montenegro	✓	✓	✓	✓	✓	✓
✓		✓		Slovakia	✓		✓	✓	✓	✓
✓		✓		Slovenia	✓	✓	✓	✓	✓	✓
✓		✓		Spain	✓	✓	✓	✓	✓	✓
✓		✓		Sweden	✓	✓	✓	✓	✓	✓
			✓	Switzerland	✓	✓	✓	✓	✓	✓
				Tajikistan						✓
				Tunisia						✓
	✓			Turkey	✓	✓	✓	✓	✓	✓
				Turkmenistan						✓
				Ukraine	✓		✓	✓		✓
✓				United Kingdom	✓	✓	✓	✓	✓	✓
				Uzbekistan						✓

♦ Cyprus is an ICAO contracting state, but represented through the Middle East (Cairo) office of ICAO

As the representative of Europe's major scheduled airlines, the Association on European Airlines (AEA) is used extensively as a data source for this report. The organisation's airline membership is given below.

Country	AEA airline member(s)		
Austria	Austrian		
Belgium	SN Brussels		
Croatia	Croatia Airlines		
Cyprus	Cyprus Airways		
Czech Republic	CSA Czech Airlines		
Denmark	SAS		
Finland	Finnair		
France	Air France		
Germany	Lufthansa		
Greece	Olympic Airlines		
Hungary	Malev Hungarian Airlines		
Iceland	Icelandair		
Ireland	Aer Lingus		
Italy	Alitalia		
Luxembourg	Luxair	Cargolux	
Malta	Air Malta		
Netherlands	KLM		
Norway	SAS		
Poland	LOT		
Portugal	TAP Portugal		
Romania	TAROM		
Serbia and Montenegro	JAT Airways		
Slovenia	Adria Airways		
Spain	Iberia		
Sweden	SAS		
Switzerland	Swiss International		
Turkey	Turkish Airlines		
United Kingdom	Virgin Atlantic	British Airways	BMI

The European Regions Airline Association represents the interests of regional carriers and other organisations involved in air transport in Europe's regions. Its airline membership (2006) is shown below.

STATE	ERA Member Airlines			
Austria	Air Alps Aviation	Tyrolean Airways	Welcome Air	
Bulgaria	Hemus Air			
Switzerland	Darwin Airline	Flybaboo	Swiss International Air Lines	
Germany	Augsburg Airways	Avanti Air	Cirrus Airlines	Contact Air
	European Air Express	Eurowings	Hahn Air Lines	dauair
	Lufthansa CityLine			
Denmark	Cimber Air	Danish Air Transport		
Estonia	Aero Airlines			
Spain	Air Nostrum	Binter Canarias		
Finland	Blue1	Finncomm Airlines		
France	Brit Air	CCM Airlines	Régional	
Greece	Aegean Airlines	Euroair		
Croatia	Trade Air			
Ireland	Aer Arann	CityJet		
Iceland	Air Iceland			
Israel	Arkia Israeli Airlines			
Italy	Air Dolomiti	Alitalia Express	ClubAir	
Lithuania	Amber Air	Danu Oro Transportas		
Latvia	airBaltic			
Luxembourg	Luxair			
Montenegro	Montenegro Airlines			
Morocco	Regional Air Lines			
Netherlands	Denim Air	Interstate Airlines	KLM cityhopper	
	Coast Air	Widerøe's Flyveselskap		
Palestine	Palestinian Airlines			
Poland	EuroLOT			
Portugal	ATA - Aerocondor	PGA - Portugalia	SATA Air Açores	
Romania	Carpatair			
Russia	Kogalymavia Airlines			
Sweden	City Airline	Falcon Air	Golden Air	Malmö Aviation
	Skyways Express	West Air Sweden		
Slovenia	Adria Airways			
UK	Air Atlantique	Air Southwest	Air Wales	Eastern Airways
Ukraine	Air Urga			

Definitions of Commonly Used Air Transport Terms

Aircraft hours are the total number of aircraft block hours in revenue service, block hours being calculated from the moment it moves under its own power for purpose of flight until it comes to rest at the next point of landing

Aircraft kilometres are the sum of products obtained by multiplying the number of flights performed on each flight stage by the stage distance

Aircraft utilisation is the average number of block hours that each aircraft is in use. This is generally measured on a daily or annual basis

Available seat kilometres (ASKs) are obtained by multiplying the number of seats available for sale on each flight stage by flight stage distance

Available tonne kilometres (ATKs) are obtained by multiplying the number of tonnes (2,204 lb) of capacity available for carriage of passengers and cargo on each sector of a flight by flight stage distance

Average aircraft capacity is obtained by dividing available tonne kilometres by aircraft kilometres flown (or available seat-kms by aircraft kms flown)

Average passenger haul is obtained by dividing revenue passenger kilometres flown by the number of passengers

Average stage length is obtained by dividing aircraft kilometres flown by number of aircraft departures for each airline; it is the weighted average of stage/sector lengths flown by an airline (normally the great circle distances)

Block time (hours) is the time for each flight stage or sector, measured from when the aircraft leaves the airport gate or stand (chocks off) to when it arrives on the gate or stand at the destination airport (chocks on)

Break-even load factor (%) is the load factor required to equate total traffic revenue with operating costs

Code sharing is the use of the designation code of one or more airlines on a flight operated by another airline

Co-ordinated airport is an airport where an independent co-ordinator has been appointed to facilitate the allocation of take-off and landing slots (times) to airlines at congested airports in Europe

Flying time (hours) is the time for each flight stage or sector, measured from when the aircraft leaves the ground or lifts off to when it touches down on the runway on arrival at the destination airport

Freight tonne kilometres (FTKs) are obtained by multiplying the number of tonnes of capacity carried (passengers and cargo) on each sector of a flight, by flight stage distance

Grandfather rights is the convention by which airlines retain the right to take-off and landing slot times at an airport as long as they are used (also used in conjunction with route rights)

Interlining is the acceptance by one airline of travel documents issued by another airline for carriage on the services of the first airline, according to conditions laid down in an interline agreement (which include the allocation of revenues between the two carriers); an interline passenger is one using a through fare for a journey involving two or more separate flights and two or more carriers

Operating costs per ATK is a measure obtained by dividing total operating costs by ATKs. It includes flight operating expenses, sales ticketing and promotional costs, ground operations costs and general and administration costs. It usually excludes interest payments, but includes aircraft lease rentals

Operating ratio (%) is the operating revenue expressed as a percentage of operating costs

Passengers carried are obtained by counting each passenger on a particular flight (with one flight number) once only and not repeatedly on each individual stage of that flight (or one ticket coupon equals one passenger), with a single exception that a passenger flying on both the international and domestic stages of the same flight should be counted as both a domestic and an international passenger

Passenger load factor (%) is passenger-kilometres expressed as a percentage of available seat kilometres (on a single sector, this is simplified to the number of passengers carried as a % seats available for sale)

Punctuality is measured as the percentage of flights departing within 15 minutes of schedule, according to the most widely used airline industry standard

Revenue passenger refers to passengers paying 25% or more of the normal applicable fare (for ICAO statistical purposes)

Revenue passenger kilometres (RPKs) are obtained by multiplying the number of fare paying passengers on each flight stage by flight stage distance

Revenue tonne kilometres (RTKs) are obtained by multiplying the total number of tonnes of passengers and cargo carried on each flight stage by flight stage distance. Passengers tonne kilometres are normally calculated on a standard basis of 90 kg average weight, including free and excess baggage, although this has been increased recently by some airlines (eg British Airways have recently increased the average passenger weight from 75kg to 80kg, as a result of a CAA directive, to which the 20 kg free baggage allowance should be added)

Seat factor or passenger load factor on a single sector is obtained by expressing the passengers carried as a % of the seats available for sale; on a network of routes it is obtained by expressing the total passenger-kms as a % of the total seat-kms available

Seat pitch is the standard way of measuring seat density on an aircraft. It is the distance between the back of one seat and the same point on the back of the seat in front

Scheduled freight yields are obtained by dividing total revenue from scheduled freight by RTK from freight

Scheduled passenger yields are obtained by dividing the total scheduled passenger revenue by RTK from passengers

Scheduled services are services provided by flights scheduled and performed for remuneration according to a published timetable, or so regular or frequent as to constitute a recognisably systematic series, which are open to direct booking by members of the public; also extra revenue flights occasioned by overflow traffic from scheduled flights; and preliminary revenue flights on planned new air services

Slot at an airport is the right to operate one take-off or landing at that airport within a fixed time period. In practice, the slot timings are only nominal and flights often take-off and land at times outside their specified slot period, although airlines must possess the nominal slots to operate air services. Slots are traded between airlines legally in the US, and unofficially in other parts of the world (where only the exchange of slots is officially permitted)

Unduplicated route kilometres are the lengths in kilometres of all the flight stages operated by the airline, each counted only once, and regardless of frequency or direction

Unit costs are obtained by dividing total operating costs by ATKs

Weight load factor is revenue tonne kilometres performed expressed as percentage of available tonne kilometres (also called overall load factor)

Yields are obtained by dividing the total operating revenue by RTKs (or sometimes by ATK); passenger yields are obtained by dividing passenger revenues by RPKs, and cargo yields by dividing cargo revenues by FTKs. Revenues have historically been recorded before the deduction of travel agent commissions, giving gross rather than yields net of commissions

SECTION 1

AIR TRANSPORT INDUSTRY OVERVIEW

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1 Air transport Industry overview

1.1 Regulatory/competition

There was a significant rise in the number of “Open Skies” deals reached worldwide during 2005, with sixteen such bilateral agreements being concluded, increasing the total number to 118. In all, some 86 bilateral air services agreements were concluded or amended in 2005, with over 70% featuring more liberal arrangements.

In December 2005 a multilateral agreement was reached between the Commission and eight south-east European partners (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the former Yugoslav Republic of Macedonia, Romania, Serbia, and Montenegro and the United Nations Mission in Kosovo) to establish a European Common Aviation Area. Iceland and Norway were also parties to the agreement (ECAA/1).

During the year the Commission publicised its ambitions in respect of developing aviation agreements with Australia, Chile, China, India, New Zealand, Russia and Ukraine.

Other major developments within the EU during 2005 included Council Regulation 2111/2005 (OJ L 344 of 27.12.2005) that established a list of air carriers subject to an operating ban within the Community. The Regulation requires that passengers be informed of the identity of the operating carrier when they fly.

In February 2005, the Commission put forward its proposal for a Regulation concerning the rights of persons with reduced mobility when travelling by air [COM(2005) 47]. As a result of a consultation process undertaken by the Commission, there is a wide consensus that Community law should protect the rights of persons with reduced mobility. There is also wide agreement that passengers with reduced mobility should not be charged for the assistance needed to use air transport, with the costs being spread across all air travellers.

In September 2005 the Commission adopted new rules covering start up aid granted to airlines operating new routes from regional airports. By increasing transparency and certainty the rules aim to guarantee equal treatment between public and privately owned regional airports. Under the new rules, a regional airport is permitted to give start up aid to an airline for a new, initially, non-commercially viable route, provided the amount is not more than 30%-50% of the additional costs incurred in initiating the service, included marketing and set up costs. The underlying aim is that the new service should ultimately prove profitable and as such the aid must be limited to a maximum of three years, or five years in the case of airports located in disadvantaged or outermost regions of the EU.

Following a preliminary investigation, the Commission began a formal investigation into the public service obligations imposed by Italy on air routes between Sardinia and the Italian mainland (OJ L 75 of 22.3.2005).

In September 2005 the Commission found that the Greece had granted illegal state aid to Olympic Airways and its successor Olympic Airlines¹. The declaration represented

¹ Olympic Airlines was established in December 2003 to take over the flight operations of Olympic Airways.

the culmination of an investigation that had commenced in March 2004 into state aid granted by Greece since 2002.

1.2 Airlines

1.2.1 Connectivity

From the OAG, over the 12 months to June 2005, scheduled non-stop services between 355 intra-EU city pairs were abandoned, but a further 711 added contributing to 356 net increase in services.

The proportion of single-carrier routes followed a slow decline between 1994 and 2004 (to just under 69% of all European city-pairs) this was reversed in 2005. By June of that year slightly more than 70% of European schedule air services were operated by only one airline. The reason for this is likely to be found in the new point-to-point routes being opened, often by low-cost carriers. Many of these are still in an initial phase of development, with passenger demand unlikely to attract competition. The highest number of carriers operating on any European route was seven, competing for traffic between Catania and Milan.

1.2.2 Capacity

There were no European regional or network airlines start-ups in 2005, but three new charter and three new LCC airlines started operations. There were five LCC failures, five charters and one regional ceased operating.

Passenger capacity of members of the Association of European Airlines (AEA) increased by an average of 4.3% (available seat kilometres), so that the RPK growth of 6.3% resulted in increased passenger load factors (PLF), up from an average 74.6% in 2004 to the 76.0% level reported for 2005. Intra-European PLF increased 1.7% points to 67.2%, with long-haul PLF growing by a more modest 1% point to 81.1%.

1.2.3 Traffic

IATA reports intra-European passenger flows as accounting for around 23% of total world passengers in 2004. This places the European market as the second busiest, behind the internal North American market, with 29% of the world's passengers.

The traffic carried by the 26 reporting AEA airlines mirrored the world picture in 2005: system-wide passenger numbers advanced by 4.5% while passenger-kms rose by 6.1%, indicating an increase in the average passenger trip length. They experienced strongest RPK growth on South Atlantic routes (+13%), followed by Europe to/from Far East and Australasia (12%). Domestic and intra-European traffic rose by 6% and 7% respectively.

Freight traffic carried by AEA carriers increased by only 2% in 2005, although FTKs reported for Europe to/from sub-Saharan Africa increased by 8%, followed by 7% for the South and Mid Atlantic and 6% Europe/Far East and Australasia

1.2.4 Financial results

Financial results for twenty European airlines show some improvement in 2005, but operating margins were still very low overall. These airlines were the largest AEA members, apart from Olympic and Spanair for which data was not available. The table below shows that the European airlines achieved a small margin of 3% in 2005, up almost 1% point compared to 2004, in a difficult year of large increases in fuel costs. This however disguises a large variation across the sample. Net losses were recorded in 2005 by Alitalia, SAS, Swiss and TAP Air Portugal, while British Airways, Iberia and Lufthansa all made significant improvements.

The improvement in profitability was caused principally by an increase in overall load factor to almost 70%. Yields increased by 5% helped by fuel surcharges, but unit costs advanced faster in spite of the contribution of 4% lower unit labour costs. Labour productivity advanced by 4.7%, with average costs per employee up by less than 1%. The weighted average rate of exchange used to convert local currencies to the US dollar was little changed over the year.

Table 1 Financial results: European airlines 2005 vs 2004

	2005*	2004*	%(pts) change
Operating margin (%)	2.9	2.1	0.8
Total revenue per RTK (US cents)	97.5	92.8	5.1
Operating cost per ATK (US cents)	66.3	62.7	5.7
Overall load factor (%)	69.8	69.0	0.8
Debt/equity ratio	2.1	2.6	-18.1
Pre-tax profit as % long-term capital	4.8	3.4	1.4
After tax profit as % equity	10.2	9.9	n/a
Operating leases as % long-term capital	32.0	32.4	-0.4
Average sector length (kms)**	1,301	1,326	-1.9

* Aggregate of airlines reporting different financial year ends: largest part of FY falling in 2004 or 2005

** based on IATA data for calendar year

Returns on both investment and equity were both up in 2005, but still well below industry yardsticks. Given the high reliance on aircraft on operating lease, these were capitalised by multiplying annual operating lease rentals by seven. In the above table balance sheet weaknesses following 9/11 were still much in evidence for some carriers, but the average was significantly improved to just above 2:1.

Total cash and deposits in current assets improved from US\$9 billion to \$13 billion: this would cover 52 days of cash expenses (versus 44 days at the end of 2003). However, some of the airlines still had very low cash reserves, and some of the airlines in the sample were part of larger tour operators, and their reserves may have been held by the parent company.

1.3 Airports

There was strong growth in passenger traffic recorded at Europe's airports in 2005. Total passenger volume increased by 5.1% between 2004 and 2005 while total freight

traffic rose by 2.7% over the same period ². London Heathrow remained Europe's busiest airport in 2005 followed by Paris Charles de Gaulle and Frankfurt. Of the top twenty airports (in terms of traffic volume), the highest growth in 2005 was recorded at Barcelona (10%) and Madrid (8.5%). More significant levels of growth were, however, achieved at smaller accession state airports such as Riga (77%) and Bratislava (48%), fuelled primarily by low cost carrier services.

Rising security-related expenditure and energy prices were key factors contributing to a general increase in airport operating costs across the region, hence the slight reduction in average airport operating margin from 22.0% to 21.6% between 2004 to 2005 ³. Strong passenger traffic growth, particularly that fuelled by low cost carriers, appears to have impacted more on revenues generated at secondary airports outside of the sample of airport operators included in the survey.

During 2005, the only significant airport transactions were the German government's sale of its shares in Fraport and BAA's purchase of Budapest Airport. The French government continued with its preparations to partially privatise Aéroports de Paris.

There was a decline in overall airport departure punctuality between 2004 and 2005. The number of on-time departures fell by 2%. The least punctual of the major airports was London Heathrow where 28% of flights were delayed by more than fifteen minutes followed by Athens (26.9%) and Rome Fiumicino (26.7%). There were improvements in departure punctuality between 2004 and 2005 recorded at Dusseldorf, Zurich, Vienna and Amsterdam airports.

1.4 Air traffic control

Much of the developments on Galileo during the year revolved around discussions on which of the two rival consortia should be awarded the satellite navigation concession. The decision not to award the concession was attributed to the strength of both bids and by the end of the year the two consortia were working together as a single entity, with the concession contract expected to be signed in 2006. During 2005, including China, Israel, Ukraine, India and Morocco joined the Galileo programme, giving the programme a truly international flavour.

Most of the European Single Sky developments in 2005 were linked to various aspects of planned future co-operation and consolidation of air traffic management activities. The United Kingdom and Ireland commissioned a study to examine the creation of a single block of airspace over both countries and the oceanic areas of the North Atlantic presently under their control. The CEATS saga continued to rumble along with final agreement between the countries still being awaited by the end of the year. Spain and Portugal commenced an examination into the rationalization of their ATC operations and the EC has provided funding to the Skaane project, linked to the coupling of Danish and Swedish air traffic services. Joint ventures were set up for the development of next generation air traffic management systems, one group being NAYS and the other being Slovenia, the Czech Republic and Austria.

Eurocontrol produces delay statistics from the Central Office for Delay Analysis (CODA). Eurocontrol's 2005 annual report records a total of over nine million flights, an increase of 4% over 2004. Domestic flights, 37% of 2005 traffic, increased

² ACI Europe airports

³ Sample of top twenty EU airport operators and top two accession state airport operators.

by 2% whereas international traffic increased by 5%. The average delay per movement, for all causes of delay, was 11.3 minutes for departure traffic (an increase of 9% on 2004) and 11.0 minutes for arrival traffic (an increase of 3%). Around half of the departure delays in 2005 were attributed to airlines, 19% to airports and 11% to en-route flow control. These figures are identical to those for 2004.

1.5 The environment

There was much discussion in 2005 about air transport being included in the European Emissions Trading Scheme (ETS). Stakeholders presented their views to the European Commission, and the Commission published the draft results of a study that concluded that this was feasible. One environmental group pointed out that there was a need to reduce demand since its growth at around 5% a year was well above the 1-2% efficiency gains that the industry could deliver. There was also discussion about the scope of an aviation ETS, in particular whether it would apply to intra-EU flights only or whether flights to/from EU should be included. By the end of the year the target 2007 introduction of the scheme was no longer possible.

Fuel efficiency in terms of revenue tonne-kms per US gallon was either unchanged or worse for the top five EU network carriers, in spite of a small increase in average sector length. However, a higher average age of aircraft was one factor.

1.6 Consumer issues

Recent evidence suggests that leisure travel within Europe is growing faster than business travel. A very recent UK CAA passenger survey data shows a comparison between international scheduled traffic flows from five major UK airports to various European countries in 2003 and 2005. Overall across these 13 countries traffic grew by just over 5% per annum. However, leisure traffic grew by 6.4% per annum and business traffic by 2.5% per annum. This meant that the share of leisure traffic on these country-pairs increased from 69.4% in 2003 to 70.9% in 2005.

However, the percentage of business class passengers using business class products for intra-European travel declined by 1% for AEA carriers (2005 versus 2004). A study of over 50 aviation executives and analysts conducted in 2005 reached the consensus that the long term prognosis for business class products for short haul travel in Europe was not good with 80% of respondents agreeing with the statement 'business class products will no longer provided on the short haul market by 2015'.

1.7 Airline alliances and mergers

The three global alliances, Star Alliance, Sky Team, and Oneworld, accounted for over 54% of world RPKs in 2005. Between them they carried over 47% of all passengers, and had a revenue share of over 57%.

The largest second-tier growth came during the summer of 2005 with Sky Team welcoming Air Europa, Copa Airlines, Kenya Airways, Tarom, and Portugalia, to its associate membership programme. It also prepares to have Aeroflot and China Southern Airlines join the scheme. The Air France takeover of KLM is expected to result in changes to Sky Team and the KLM-Northwest Airlines partnership in particular.

Malev will join Oneworld as a full member in 2007. While its historic growth has been limited it is hoping to use Cathay Pacific's stake in Air China to gain a foothold in China. It is also actively trying to persuade Japan Airlines to join the alliance.

Lufthansa and TAP Air Portugal have started an extensive strategic cooperation. As of 1st February 2005, the two airlines offer code-sharing flights. They will also coordinate other areas such as baggage handling, airport services and lounges.

1.8 Airline distribution

Advances in technology coupled with the pressure to reduce costs in the post 9/11 airline industry have forced every player in the distribution chain to re-evaluate its strategy and business processes. Fare transparency provided by airline websites and internet travel agencies has led to a behavioural shift in consumer purchasing, with the internet becoming a major distribution channel. Airlines are using the internet tool to increase direct on-line sales and put pressure on intermediaries to reduce fees. GDS deregulation in the US and the potential revision in Europe have added to the turbulence of the market, affecting the business relationships between the four key stakeholders corporates, airlines, GDSs and travel management companies.

E-ticketing continued to spread in Europe, where over 20% of air tickets were issued in this format. This was slightly above the industry average of 19%. There were wide differences among European countries in the adoption of this technology.

1.9 Aircraft

For the second year running Airbus received more orders than Boeing ending the year with 53% market share of airliners with more than 100 seats. Boeing however was making strides with the B787 and Airbus eventually responded with the A350 "commercial launch". Airbus gained ten new orders for the A380, while Boeing still held off from announcing any development to the B747-400.

In the regional market, Bombardier and Embraer had mixed fortunes, both suffered from the downturn in the 50-seat regional jet market, while orders for their larger offerings, the CRJ700/900 and EJ170/190 families, did well.

ATR saw an increase in turboprop orders on the previous year although these were still well below the level of equivalent sized jets.

1.10 Labour

Table 2 Labour costs and productivity: 16 major European network airlines

	2005	2004	%(pts) change
Total employees (year average x 000)	311,431	311,542	0.0
Total labour costs (US\$ m)	23,250	23,106	0.6
Average cost per employee (\$)	74,654	74,167	0.7
Average ATKs per employee	452,633	432,282	4.7
Unit labour costs (US cents)	16.5	17.2	-3.9

Source: ICAO and airline annual reports

Total European airline employment for the sixteen largest European network carriers was around 310,000 in 2005, unchanged from the previous year.

Average costs per employee were also kept in check, and with a 4.7% increase in labour productivity, unit labour costs were down by just under 4%.

SECTION 2

REGULATORY DEVELOPMENTS

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2 Regulatory developments

2.1 Global developments

Of the 86 bilateral air services agreements concluded or amended worldwide in 2005, over 70% comprised more liberal arrangements. There was a further significant rise in the number of “Open Skies” deals, which feature full market access with no limits on route rights, capacity, designation, code-sharing and tariffs. Sixteen such bilateral agreements were concluded during 2005, raising the total number of “Open Skies” deals to 118.

In terms of multi-state agreements, noteworthy developments during the course of 2005 included the following:

EU – the Commission’s negotiations continued on an Open Aviation agreement with the US. A Euro-Mediterranean aviation agreement was reached with Morocco, as was a European Common Aviation Area agreement with countries of the Western Balkans. Negotiations continued in respect of the Commission’s “horizontal” mandate, the aim of which is to replace certain specific provisions in existing agreements with third countries that were declared contrary to Community law by the European Court of Justice in 2002.

ASEAN – the ten Member States of the Association of South East Asian Nations adopted a road map with the aim of liberalising air cargo services in 2008 and passenger services in 2010, as well as establishing a common ASEAN aviation market in 2015.

African ministers responsible for aviation adopted a plan of action to expedite and monitor the implementation of the Yamoussoukro Decision of 1999, which liberalises intra-African air services.

Peru withdrew from the Multilateral Agreement on the Liberalisation of International Air Transportation (MALIAT) generally referred to as the Kona “Open Skies” agreement.

The process of liberalising air transport policies at the national level continued in several states. Four developments of particular note involved firstly, Nigeria where two more airlines were designated to operate intra-regional and intercontinental services; secondly, Venezuela introduced a fare band system allowing airlines the freedom to set certain domestic fares within prescribed zones; thirdly, the UK announced the liberalisation of foreign airlines’ fifth freedom rights involving regional airports; and fourthly, China adopted more flexible regulatory measures in respect of newly established low cost carriers.

In terms of state aid, the government of Jamaica committed itself to a maximum annual subsidy of US\$30 m, while the government of Cyprus was authorised by the Commission to provide €100 million of rescue aid to Cyprus Airways.

2.2 EU Developments

2.2.1 Community air services agreements with third countries

The Commission continued with the process of bringing the existing 2,000 bilateral agreements with third countries into line with European law. By the end of 2005, twenty “horizontal” agreements had been initialled bringing over 300 bilateral agreements into legal conformity.

In March, the Commission outlined its ambition to achieve by 2010 a common aviation area bringing together the Community and all its partners located along its southern and eastern borders, the aim being to achieve a high degree of economic and regulatory integration of aviation markets comprising 35 countries and over 500 million people (IP/05/288). In furtherance of this ambition, a multilateral agreement was reached in December between the Commission and eight south east European partners (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the former Yugoslav Republic of Macedonia, Romania, Serbia, and Montenegro and the United Nations Mission in Kosovo) to establish a European Common Aviation Area. Iceland and Norway were also parties to the agreement (ECAA/1).

Also in March, the Commission indicated its intention to begin negotiations with key third countries, with a mandate initially being sought from the Council in respect of China. In response to this request, the Council stressed that before granting any further mandates to negotiate comprehensive agreements with third countries, the added value of any Community-level agreement would need to be clearly demonstrated in each case. An aviation summit meeting between the EU and China was held in Beijing in July.

In March, the Commission publicized its ambitions in respect of a proposed framework for developing an aviation agreement with Russia [COM(2005) 77] and in September, the proposed Commission published its proposal to develop a Common Aviation Area with Ukraine [COM(2005) 451]. Also in September, the Commission announced its intentions to develop comprehensive aviation agreements with Australia [COM(2005) 408], Chile [COM(2005) 406], India [COM(2005) 409] and New Zealand [COM(2005) 407]. Australia, Chile and New Zealand are among the countries that have already signed or initialled “horizontal” agreements with the EU. In respect of Russia, the European Parliament are insisting that the issue of Siberian over-flight charging be resolved before any more liberalized agreement is reached. Payments by European carriers for over-flying Siberia amount to around €250m annually.

Negotiations continued during 2005 on an EU-US aviation agreement and whilst significant progress was achieved, the Council of Ministers was of the opinion that improvements in the terms relating to the ownership and control of US airlines would be needed before the first stage of a deal could be concluded. The US Administration has been seeking ways to relax the rules governing control of US airlines by foreign nationals. In November the US Department of Transportation issued a “Notice of Proposed Rulemaking” that would reinterpret the statutory requirement for US airlines to be under the actual control of US citizens in order to expand the opportunities for foreigners to invest in and participate in the management of US carriers. A number of EU airlines however, have expressed doubts as to the feasibility of the proposed change.

2.2.2 Consumer protection

In February, the Commission put forward its proposal for a Regulation concerning the rights of persons with reduced mobility when travelling by air [COM(2005) 47]. As a result of a consultation process undertaken by the Commission, there is a wide consensus that Community law should protect the rights of persons with reduced mobility. There is also wide agreement that passengers with reduced mobility should not be charged for the assistance needed to use air transport, with the costs being spread between all air travellers. The issue of whether airlines or airports should be responsible for assistance at airports was fiercely contested, however. The Commission's view is that the managing body of an airport should be responsible for providing assistance to passengers with reduced mobility, but be able to levy a charge to airlines using the airport to cover the costs of such provision.

Aside from the issue of specific measures in favour of persons with reduced mobility, the Commission identified a number of other matters pertaining to the rights of consumers across all modes of public transport that needed strengthening [COM(2005) 46]. These include: automatic and immediate solutions when travel is interrupted, liability in the event of death or injury of passengers, the treatment of complaints and means of redress, and passenger information. In respect of air travel, the issues of carrier identity, the availability of information on relative airline performance, integrated ticketing and passenger rights in the event of the bankruptcy of an air carrier were highlighted.

2.2.3 State aids

In September 2005 the Commission found that Greece had granted illegal state aid to Olympic Airways and its successor Olympic Airlines⁴. The declaration represented the culmination of an investigation begun in March 2004 into state aid granted by Greece since 2002. In December 2002 Olympic Airways had been ordered to repay €160m of illegal aid to the Greek state. Aside from this sum not being repaid, further amounts of illegal aid have been provided by Greece to Olympic Airways and its successor company. These aid payments violate the “one time, last time” principle, under which the carrier had benefited previously from restructuring aid.

2.2.4 Operating ban for safety reasons

Regulation (EC) 2111/2005 establishes a list of air carriers subject to an operating ban within the Community (OJ L 344, 27.12.2005, p. 15–22). In considering whether an air carrier should be totally or partially banned, an assessment will be made to determine if the airline is meeting the relevant safety standards taking into account verified evidence of serious safety deficiencies, the lack of ability and/or willingness of an air carrier to address safety deficiencies, and the lack of ability and/or willingness of the authorities responsible for the oversight of an air carrier to address safety deficiencies.

2.2.5 Development aid for regional airports

The Commission published detailed Guidelines on development aid for airports and air services in December 2005 (O.J. C 312, 09/12/2005), thereby expanding its 1994 guidelines on the applications of Articles 92 and 93 of the EC Treaty and Article 61 of the EEA Agreement to state aid in respect of air transport (O.J. C 312 of 9.12.05).

⁴ Olympic Airlines was established in December 2003 to take over the flight operations of Olympic Airways.

Four categories of airport are defined: A being large Community airports with more than ten million passengers annually, B comprising national airports with a passenger throughput of between five and ten million, C consisting of large regional airports handling between one and five million passengers, and D being small regional airports with annual passenger traffic of less than one million. Public funding to categories A and B will normally be considered to distort, or threaten to distort, competition and to affect trade between the Member States, while state funding of small regional airports (category D) will be unlikely to do so. No distinction is made between airports on the basis of ownership. Aid for new air services will normally only be allowed in respect of operations to EU destinations from categories C and D airports. State funding is permitted for a period of three years, with the amount of aid not allowed to exceed 50% of total eligible costs in any one year and not be more than 30% overall. However, for routes serving disadvantaged regions, aid may be granted for up to five years covering up to 40% of overall eligible costs.

2.2.6 Public service obligations on air services to Sardinia

In March 2005 the Commission began a formal investigation into the public service obligations imposed by Italy on 18 air routes between Sardinia and airports on the Italian mainland (OJ L 75, 22.3.2005, p. 53–57). The announcement followed a preliminary investigation by the Commission over its concern that certain aspects of the Sardinia public service obligations did not conform to European legislation. In particular, the Commission wishes to assess the extent to which the routes are vital for Sardinia's economic development and the requirement that tendering carriers operate all 18 routes.

2.2.7 IATA Passenger Tariff conferences

In November 2005 the Commission presented for consultation a draft Block Exemption Regulation aimed at revising the exemption IATA passenger tariff conferences have from Article 81 of the EC Treaty. The draft Regulation proposes that exemption for tariff conferences in respect of routes within the EU is discontinued from the beginning of 2007. For routes between the EU and third countries, it is proposed that an exemption for the current arrangements continue until 30 June 2008, providing participating carriers provide data to the Commission to enable a detailed review of the situation to be undertaken in 2008.

2.2.8 Air Traffic Controllers

In February 2005 the Transport Committee backed plans for a single licence for air traffic controllers with the aim to harmonise current national variations and promote recognition among EU Member States. Such a licence would simplify the process for air traffic controllers working outside their home country, and permit greater manpower flexibility in providing cross-border services within the EU.

A standard EU licence has the potential to improve safety as controllers will be required to speak and understand the English language to a satisfactory level in all Member States. The only exception would be conversation with essential airport services where the local language may be more practical.

The legislative resolution was adopted by the European Parliament in March 2005.

2.2.9 European Aviation Safety Agency

In November 2005 the EC extended the remit of EASA to include rulemaking and the oversight of air operations, pilot qualifications and licensing, and oversight of third country airlines operating in the EU [COM(2005) 578].

The proposal allowed for EASA to manage pilot licenses in order to ensure that they observe with the European rules on knowledge, skills, and linguistic ability. The Agency will also develop the current requirements for EU pilots, work with national authorities to issue and monitor licenses, and inspect and audit training and medical providers.

The proposal also detailed requirements for both EU and non-EU aircraft to follow when operating within the EU. The development of more detailed rules will be based on the current intergovernmental rules of the Joint Aviation Authorities and implemented as EC regulations. This will allow them to be applied across the EU with a common legal basis. While national authorities will still issue certificates, EASA will adopt responsibility for ensuring compliance.

Furthermore the proposal confirms that EASA will become responsible for certifying compliance to non-EU airlines in respect to minimum requirements for operating aircraft within the EU. At present no EU Member State issues such certificates.

Jacques Barrot, VP Transport, suggested that “We had a tragic summer marked by a spate of air crashes that claimed more than 500 lives. European passengers need to be assured that all aircrafts abide by the highest safety standards. I want stringent safety rules to apply in all Member States and to all airlines whether based in the EU or not”.

By 2010 the EC plans to have the entire area of aviation safety covered by a single organisation by extending the remit of EASA to include the safety and interoperability of Air Navigation Services, Air Traffic Management, and airports.

2.2.10 Aviation Noise Pollution

In December 2005 the EC decided to take Latvia to the European Court of Justice for failing to adopt legislation on noise-related operating restrictions at airports within the EU. Jacques Barrot, VP Transport, stated that “Noise around airports is a particularly important issue for European citizens. Latvia must apply as soon as possible this legislation that provides for coherent solutions to noise problems around EU airports”.

SECTION 3

CAPACITY

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Table 3 Changes to domestic networks between June 2004 and June 2005

	city pairs		
	dropped	started	balance
Austria	1		-1
Bulgaria	1		-1
Croatia		1	1
Denmark	2	1	-1
Estonia		2	2
Finland	10		-10
France	5	11	6
Germany	20	20	
Greece	5	6	1
Iceland	2		-2
Italy	19	23	4
Netherlands		2	2
Norway	2	3	1
Poland	3	1	-2
Portugal		3	3
Romania	4	6	2
Spain	14	27	13
Sweden	14	5	-9
Switzerland		2	2
Turkey	6	7	1
United Kingdom	12	51	39
TOTALS	120	171	51

Source:OAG

The UK and Spain are countries showing the greatest net gain in air services. The UK had the greatest number of new city pairs linked over the year. Sweden and Finland had net losses of domestic services, further evidence of a retrenchment of domestic networks in those countries. Table 4 show the ten Finnish city pairs that lost their air links: there were no new Finnish city pairs.

Table 4 Losses to the Finnish domestic network

	Between and	Airline operating in 2004
HELSINKI	MARIEHAMN	Finnair
IVALO	TAMPERE	Soder Airlines
JOENSUU	TAMPERE	Finnair
KEMI/TORNIO	ROVANIEMI	Finnair
KITTILA	TAMPERE	Soder Airlines
MARIEHAMN	TURKU	European Executive Express
MIKKELI	SAVONLINNA	Golden Air
OULU	TAMPERE	Soder Airlines
SEINAJOKI	VAASA	Golden Air
SAVONLINNA	VARKAUS	Golden Air

Source: OAG

Table 5 summarises the activity in the cross-border environment. The high turnover in routes abandoned and started is quite striking, particular the spectacular growth in new domestic services joining cities in Spain and the UK.

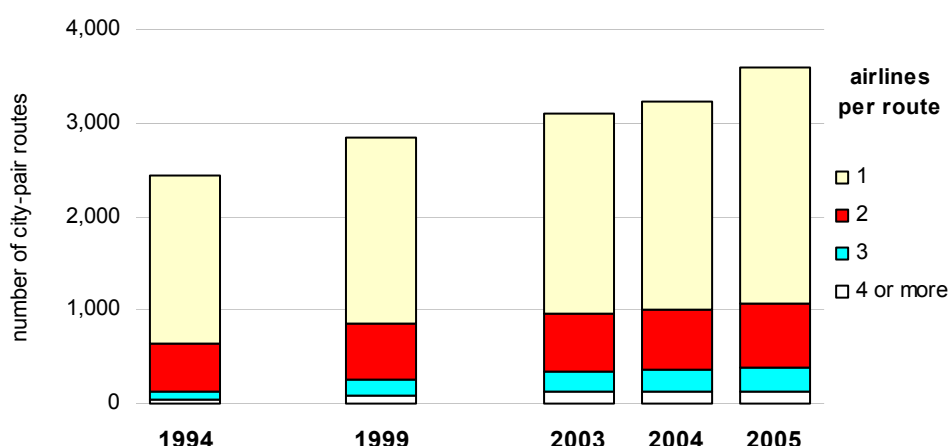
Table 5 Changes to international intra-European networks, 2004-2005

Between city pairs				Between city pairs				Between city pairs						
and	dropped	started	balance	and	dropped	started	balance	and	dropped	started	balance			
Austria	Bulgaria	1	1	Estonia	Finland	1	1	Italy	Latvia	1	1			
Austria	Finland	1	1	Estonia	Ireland	1	1	Italy	Lithuania	1	1			
Austria	France	3	3	Estonia	Sweden	2	2	Italy	Luxembourg	1	-1			
Austria	Germany	2	5	3	Estonia	UK	1	1	Italy	Malta	1	1		
Austria	Greece	18	1	-17	Finland	Greece	3	3	Italy	Netherlands	1	5	4	
Austria	Iceland	1	1	1	Finland	Italy	4	4	Italy	Poland	4	4		
Austria	Italy	3	3	1	Finland	Latvia	1	1	Italy	Romania	2	5	3	
Austria	Portugal	2	2	-2	Finland	Portugal	1	1	Italy	Sweden	1	1		
Austria	Romania	1	1	1	Finland	Slovenia	1	-1	Latvia	Turkey	1	1		
Austria	Slovenia	1	1	1	Finland	Sweden	2	-2	Lithuania	Norway	1	1		
Austria	Spain	6	6	-6	Finland	Turkey	1	1	Lithuania	Sweden	3	-3		
Austria	Switzerland	2	2	-2	Finland	UK	1	-1	Luxembourg	Poland	1	1		
Austria	Turkey	1	1	-1	France	Croatia	2	2	Luxembourg	Sweden	1	-1		
Austria	UK	1	2	1	France	Hungary	1	1	Malta	Poland	1	1		
Belgium	Croatia	2	2	2	France	Ireland	6	6	Netherlands	Poland	1	1		
Belgium	Cyprus	1	1	-1	France	Italy	6	6	Netherlands	Portugal	1	-1		
Belgium	Estonia	1	1	1	France	Latvia	1	1	Norway	Poland	2	2		
Belgium	France	4	4	4	France	Malta	2	2	Norway	Sweden	3	3		
Belgium	Italy	2	3	1	France	Netherlands	3	-3	Poland	Portugal	2	2		
Belgium	Spain	3	3	3	France	Norway	2	2	Poland	Sweden	2	2		
Belgium	Switzerland	1	1	-1	France	Poland	1	1	Portugal	Turkey	1	1		
Belgium	UK	1	1	-1	France	Portugal	2	2	Spain	Finland	1	2	1	
Bulgaria	Germany	4	4	4	France	Slovakia	1	1	Spain	France	2	3	1	
Bulgaria	Hungary	1	1	1	France	Sweden	1	3	2	Spain	Hungary	3	3	
Bulgaria	Netherlands	1	1	1	France	Turkey	1	1	1	Spain	Ireland	1	6	5
Bulgaria	Slovakia	1	1	-1	France	UK	8	23	15	Spain	Italy	5	10	5
Bulgaria	Spain	2	2	2	Germany	Croatia	9	9	9	Spain	Latvia	1	1	
Bulgaria	UK	1	1	1	Germany	Denmark	1	1	1	Spain	Lithuania	1	1	
Croatia	Italy	1	1	1	Germany	Estonia	1	-1	Spain	Luxembourg	1	-1		
Croatia	Luxembourg	1	1	1	Germany	France	5	6	1	Spain	Netherlands	3	1	-2
Croatia	Norway	3	3	3	Germany	Greece	13	11	-2	Spain	Norway	1	2	1
Croatia	Slovakia	1	1	1	Germany	Hungary	4	4	4	Spain	Poland	8	8	
Croatia	Slovenia	1	1	-1	Germany	Ireland	1	4	3	Spain	Portugal	2	7	5
Croatia	Sweden	1	1	1	Germany	Italy	10	17	7	Spain	Sweden	3	1	-2
Cyprus	France	1	1	1	Germany	Latvia	2	2	2	Spain	UK	4	58	54
Cyprus	Germany	2	2	-2	Germany	Lithuania	1	3	2	Sweden	Turkey	1	1	
Cyprus	Greece	1	3	2	Germany	Luxembourg	1	1	1	Switzerland	Czech Rep.	1	1	
Cyprus	Spain	1	1	-1	Germany	Malta	1	-1	-1	Switzerland	Finland	1	-1	
Cyprus	Turkey	1	1	-1	Germany	Netherlands	1	1	1	Switzerland	France	1	3	2
Cyprus	UK	3	3	3	Germany	Norway	2	2	2	Switzerland	Germany	3	3	
Czech Rep.	Denmark	1	1	1	Germany	Poland	4	14	10	Switzerland	Hungary	1	1	
Czech Rep.	Germany	2	2	2	Germany	Portugal	5	2	-3	Switzerland	Iceland	1	1	
Czech Rep.	Greece	1	1	1	Germany	Romania	1	2	1	Switzerland	Italy	1	14	13
Czech Rep.	Italy	1	1	1	Germany	Slovakia	1	-1	-1	Switzerland	Netherlands	1	-1	
Czech Rep.	Norway	1	1	1	Germany	Slovenia	1	1	1	Switzerland	Norway	1	-1	
Czech Rep.	Slovakia	1	1	1	Germany	Spain	21	12	-9	Switzerland	Spain	5	5	
Czech Rep.	Spain	1	1	1	Germany	Sweden	2	2	2	Switzerland	Sweden	1	1	
Czech Rep.	UK	2	4	2	Germany	Turkey	2	9	7	Switzerland	Turkey	3	3	
Denmark	Croatia	1	1	-1	Germany	UK	3	10	7	Switzerland	UK	5	4	-1
Denmark	Finland	3	3	3	Greece	Italy	1	6	5	UK	Croatia	3	3	
Denmark	Greece	3	3	3	Greece	Netherlands	1	6	5	UK	Greece	2	2	
Denmark	Italy	1	2	1	Greece	Norway	1	1	1	UK	Hungary	3	3	
Denmark	Lithuania	1	1	1	Greece	Poland	14	14	14	UK	Ireland	4	13	9
Denmark	Norway	2	2	-2	Greece	Slovakia	1	1	1	UK	Italy	3	16	13
Denmark	Portugal	1	1	1	Hungary	Ireland	1	1	1	UK	Latvia	1	1	
Denmark	Romania	1	1	1	Hungary	Poland	1	1	1	UK	Malta	3	3	
Denmark	Slovakia	1	1	1	Hungary	Sweden	2	2	2	UK	Netherlands	3	3	
Denmark	Spain	1	1	1	Ireland	Italy	2	4	2	UK	Norway	2	2	
Denmark	Sweden	1	1	-1	Ireland	Netherlands	1	1	1	UK	Poland	5	5	
Denmark	Turkey	2	2	2	Ireland	Portugal	2	2	2	UK	Portugal	11	11	
Denmark	UK	1	2	1	Ireland	Sweden	1	1	1	UK	Slovakia	1	1	
									UK	Sweden	1	1		

Source: OAG

Figure 2 shows the city-pair services added to the European network since 1994. There was a significant growth in the number of services between June 2004 and June 2005. However, although the proportion of single-carrier routes followed a slow decline between 1994 and 2004 (to just under 69% of all European city-pairs) this was reversed in 2005. By June of that year slightly more than 70% of European schedule air services were operated by only one airline. The reason for this is likely to be found in the new point-to-point routes being opened, often by low-cost carriers. Many of these are still in an initial phase of development, with passenger demand unlikely to attract competition. The highest number of carriers operating on any European route was seven, competing for traffic between Catania and Milan.

Figure 2 Evolution of European routes served by single carriers



Source: OAG

3.2 Airline start-ups and failures, 2005

An indication of the degree of competition from airlines in the EU is given by the start-ups and exits. Acquisitions or alliances are discussed under section 10.

The list below shows the more prominent births and deaths that took place between January and December 2005. In some cases, operations were suspended pending reorganisation or the search for additional finance. In other cases, the AOC of the airline was withdrawn and/or they filed for bankruptcy. Some of the births were relatively short-lived.

3.2.1 Airline start-ups

Network carrier start-ups

There were no births to report in 2005.

Regional airline start-ups

Air Aland started operations in October 2005 using a Saab 340 aircraft between Helsinki and Mariehamn.

Charter airline start-ups

Air Italy started operations in May 2005 using two Boeing 757 aircraft. Operates from Milan Malpensa, Verona and Rome to Eastern Europe, the Middle East, and Africa.

Alexandair a Greek MD82 operator, based in Crete, serving European charter market

BritishJet.com a UK-based airline flying MD90 aircraft to Malta for tour operators

Dubrovnik Airline commenced operations to European destinations in April 2005 using a fleet of two MD-83 and one MD-82 aircraft.

Interstate Airlines based in Maastricht, began wet lease operations in July 2005 initially using an ATR 42 aircraft.

Low cost carrier start-ups

- Blu-Express: began operations in November 2005. This Rome Fiumicino-based carrier is a subsidiary of the Italian charter airline Blue Panorama and began flights with two 167-seat Boeing 737-400s on a combination of domestic and international routes.
- Centralwings Polish flag-carrier LOT created this low-cost subsidiary to operate a mix of scheduled and charter flights. It began services from Warsaw in February 2005 but by the end of 2005 was also operating from Krakow, Katowice, Poznan and Wroclaw.
- Volareweb The original Volareweb ceased operations in November 2004 having grown (too) rapidly to become the third largest European LCC. On 1 June 2005 the airline re-launched under special administration with a modest two aircraft fleet of Airbus A320s from Milan Linate airport operating purely domestic routes plus a service to Paris.

After significant activity in 2004 the low-cost market attracted only two new operators in 2005 plus a re-launch of a previous airline. Both of the remaining start-ups were supported by parent companies re-allocating aircraft and resources suggesting that the days of all-new start-up airlines in the low-cost market may be coming to an end.

3.2.2 Airline failures

Network carrier failures

There were no deaths to report in 2005

Regional airline failures

- Denim Airways was the scheduled subsidiary of Denim Air. In September 2005 scheduled operations ceased, two months after being acquired by the parent of Belgium's VLM Airlines.
- Air Lithuania since 1997 the airline had been a subsidiary of state-owned Lithuanian Airlines, which sold its stake to freight & logistics group Arijus in 2004. In November 2005 the airline suspended scheduled services.
- Air Caledonian operated Bandeirante aircraft on scheduled services between its Glasgow base at Prestwick airport and Stornoway and Derry.
- Air Exel based in Maastricht, together with the Group's other regional carriers, AlsaceExel (Strasbourg-based) and GrandaExel (Turin) ceased operations in early 2005.

Charter airline failures

- Aero Flight which started operations in March 2004 from the remains of Aero Lloyd, ceased operating in November 2005. The carrier

had operated a fleet of three A320 and two A321 aircraft from German airports to holiday destinations in the Mediterranean, Balkans and Russia. The airline had 350 employees.

Air Horizons based in Paris, ceased flying in November 2005. The airline operated as Euralair Horizons before being acquired by Angel Gate Aviation in December 2003. It operated a fleet of four Boeing 737s and three Boeing 757-200s. Two of the airline's Boeing 737s performed scheduled services to Morocco, with the rest of the fleet devoted to charter operations. The airline had accumulated debts of over €20m.

Air Scandic ceased operating in September 2005. The carrier was established in 1997 and used Air Foyle Charter Airlines (AFCAL) to operate two Airbus A300 aircraft on its behalf from May 1998, serving leisure routes to Cyprus, Turkey, Tenerife and Spain. The 317-seat A300s, acquired from Finnair, were based at Newcastle and Manchester. Air Scandic was owned by UK interests, but registered in Finland.

Fischer Air a Czech carrier which operated two Boeing 737-300 aircraft, went into voluntary liquidation in November 2005 as a result of facing strong competition from Travel Service and CSA Czech Airlines. The airline was founded in 1996.

Visig based in Las Palmas, ceased operating in December 2005. Czech tour group, Travel Service, formed the airline in 2002. A single Boeing 737-400 was operated mainly to the UK.

Four charter airlines changed their names during 2005: Hapagfly (previously known as Hapag-Lloyd), Hi Fly (previously known as Air Luxor), Jetairfly (previously known as TUI Airlines Belgium), and Thomsonfly (Britannia Airways adopted the name of the low cost scheduled UK airline owned by TUI).

Low cost carrier failures:

EUjet operated Fokker 100s from Manston Airport in the UK but ceased operations in July 2005.

FlyWest a short-lived French airline reportedly ceased operations in July 2005. The airline was part of Europe Airpost which operates Boeing 737s for the French postal service. The airline was based at Brest Airport.

GEXX also known as Germania Express this German airline was taken over by dba in February 2005. dba absorbed and quickly re-allocated the fleet of 12 Fokker 100s.

JetX an Italian-based airline with an Icelandic operating licence abandoned its scheduled services in summer 2005 and reverted to being a supplier of wet-lease capacity.

MyTravelLite started a low-cost scheduled brand in 2002. The scheduled product was abandoned at the end of the summer 2005 season the capacity was absorbed into its charter operations.

Snowflake was the low-cost airline brand developed by SAS. However, SAS developed a new pricing structure and during 2005 Snowflake was absorbed back into the parent airline.

3.3 Capacity: low-cost carriers

Figure 3 shows the increases in seats per week provided by low cost carriers between June 2004 and June 2005. The three largest carriers all added significant amounts of new capacity as both Ryanair and easyJet continued to take delivery of new aircraft ordered in 2002. Air Berlin continued to increase the number of seats available for seat-only sale in their low cost business.

Second tier LCCs, Flybe, Germanwings, HLX, Norwegian and Jet2 all made significant increases in capacity during the year. Most other carriers maintained capacity close to 2004 levels.

3.3.1 EasyJet and Ryanair networks from London airports

Our 2004 report highlighted the differences in route selection of these two major players in the low cost sector of the market. It was argued that easyJet focuses on dense markets and offers frequency aimed at the business travel market, while Ryanair's focus is more on less dense leisure markets where it can dominate small routes. Further analysis of the networks of these airlines gives a measure of the different strategies they adopt.

Average number of routes served per airport (2005)

- Ryanair 2.1 routes per airport
- easyJet 3.3 routes per airport

Average number of aircraft per airport served (2005)

- Ryanair 0.84 aircraft
- easyJet 1.70 aircraft

Source: ATI, easyJet, and Ryanair

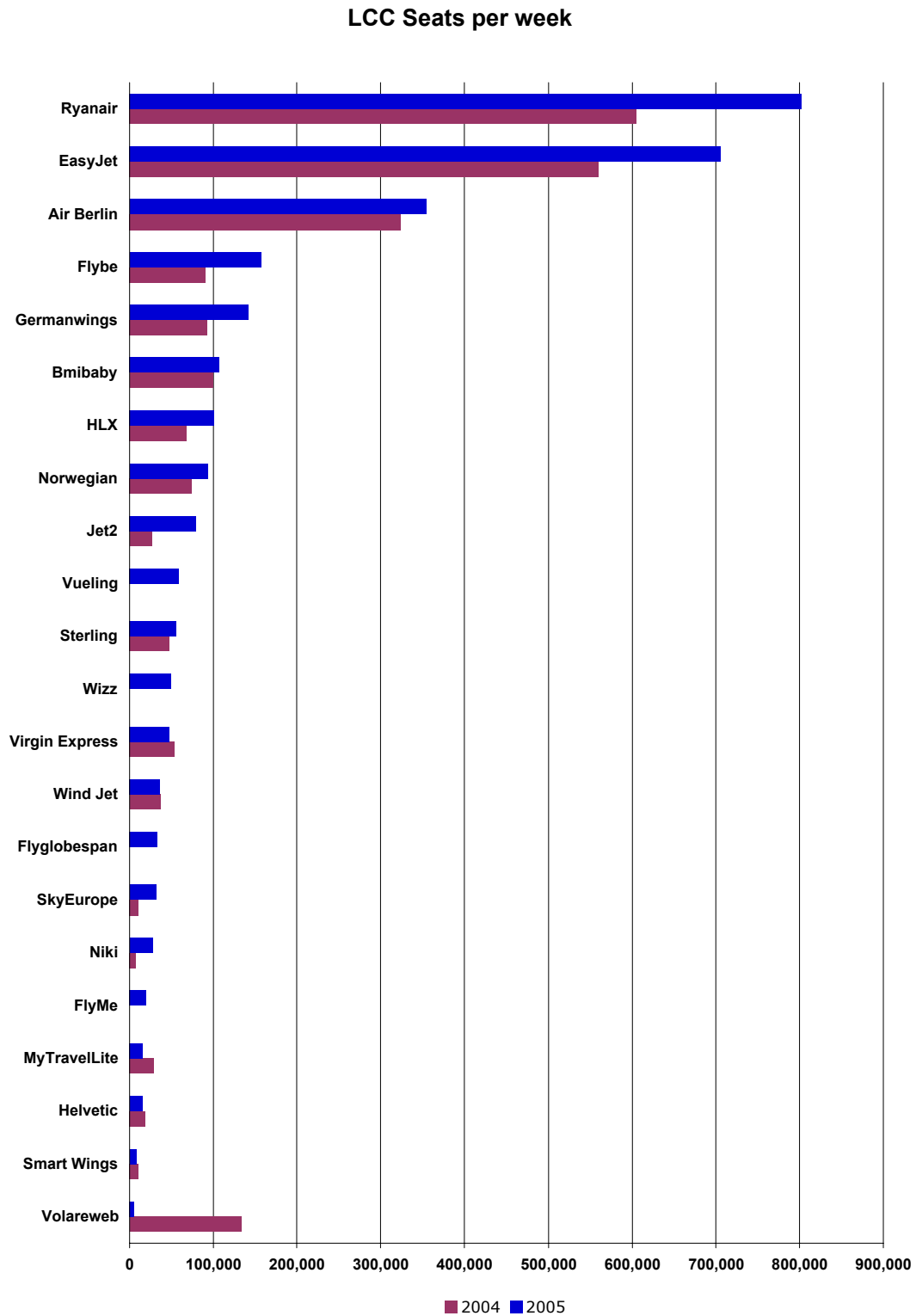
Table 6 easyJet and Ryanair London airport networks, 2001 - 2005

Airline	2001	2003	2004	2005	Annualised growth %
EasyJet					
Total Route Capacity	310,448	545,535	560,909	626,548	19.19
Average Freq (pw)	25.1	36.3	32.1	31.6	5.95
EasyJet capacity	52,246	157,046	168,944	183,149	36.83
Ave. Capacity Share	17.0%	28.8%	30.1%	29.2%	14.51
Ave no of competitors	4.00	2.66	2.26	2.35	-12.48
No of routes with other LCAs	8	7	8	25	32.96
No of routes	14	29	35	49	36.78
Ryanair					
Total Route Capacity	290,021	418,559	368,680	404,246	8.66
Average Freq (pw)	17.1	17.3	15.1	14.8	-3.52
Ryanair capacity	96,199	170,797	168,357	199,036	19.93
Ave. Capacity Share	33.0%	40.8%	45.7%	49.2%	10.52
Ave no of competitors	1.11	0.89	0.70	0.86	-6.18
No of routes with other LCAs	5	6	9	18	37.74
No of routes	35	62	65	72	19.76

Table 6 highlights the differences in the network strategies of the two main LCCs. 'Total Route Capacity' refers to the total number of seats offered in all routes the airlines operate on from London. Here we see easyJet operates in larger markets than Ryanair, offering a lower share of total seat capacity. Thus easyjet's average capacity share on London routes was 29.2%, while Ryanair offered 49.2%. This manifestation

of different business strategies is further illustrated in Figure 4, where Ryanair is shown to operate in a large number of small markets where the airline is either the only carrier or has just one competitor.

Figure 3 Seats provided by low-cost carriers, June 2004 and June 2005



Source: OAG

Ryanair has operations at a large number of airports offering an average of just over two destinations from each airport, while easyJet operates fewer routes than Ryanair, resulting in a more dense network offering over three destinations per airport.

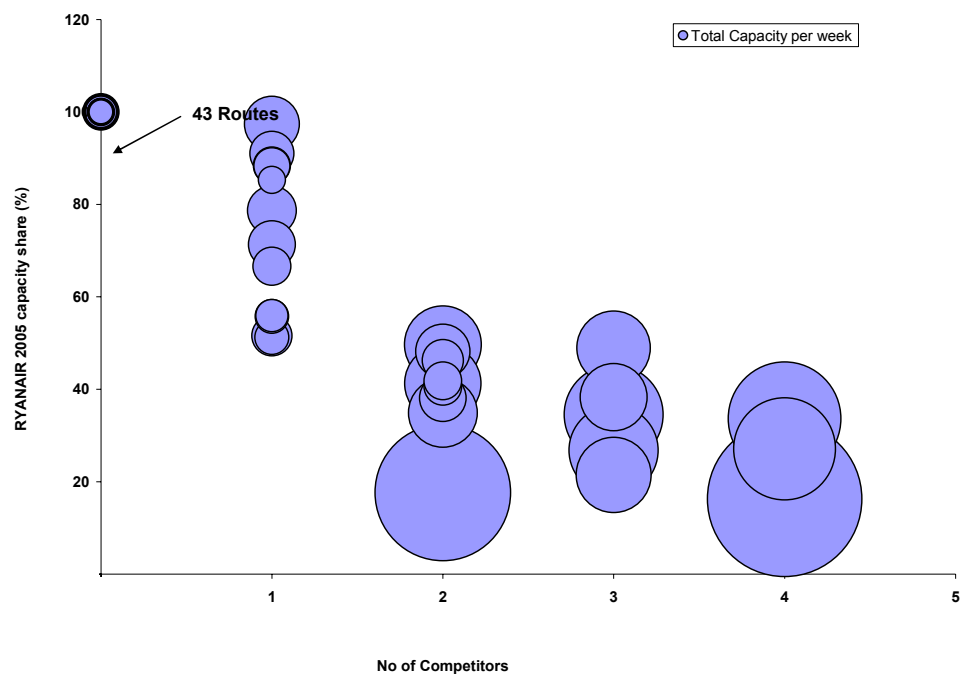
As Ryanair pursues market domination in a large number of small markets, easyJet is positioning itself to be a clear alternative to the short haul services offered by network carriers. Easyjet’s network is more dense, focused on fewer but larger routes. On these routes the airline offers considerable higher frequencies than Ryanair. In 2005 the average weekly number of flights per route ex-London easyJet offered was nearly 32, while Ryanair offered only an average twice-daily service.

For both airlines 2005 saw significant growth in the number of routes on which they faced LCC competitors. In 2005 Ryanair increased the number of routes it flew from London by only seven while the number of routes where it faced competition from other LCCs doubled from 9 to 18. In easyJet’s case the rise in LCC competition was much more severe, with the number of their routes with LCC competition trebling from 8 to 25. This meant the carrier now faced LCC competition on more than half of its routes.

Figure 4 shows the type of routes served by Ryanair from London in the summer of 2005. The size of each bubble reflects the seat capacity of the market from London for each city pair in which Ryanair competes.

The x-axis shows the number of competitors the airline faces on each route, while the y-axis shows Ryanair’s share of the seat capacity.

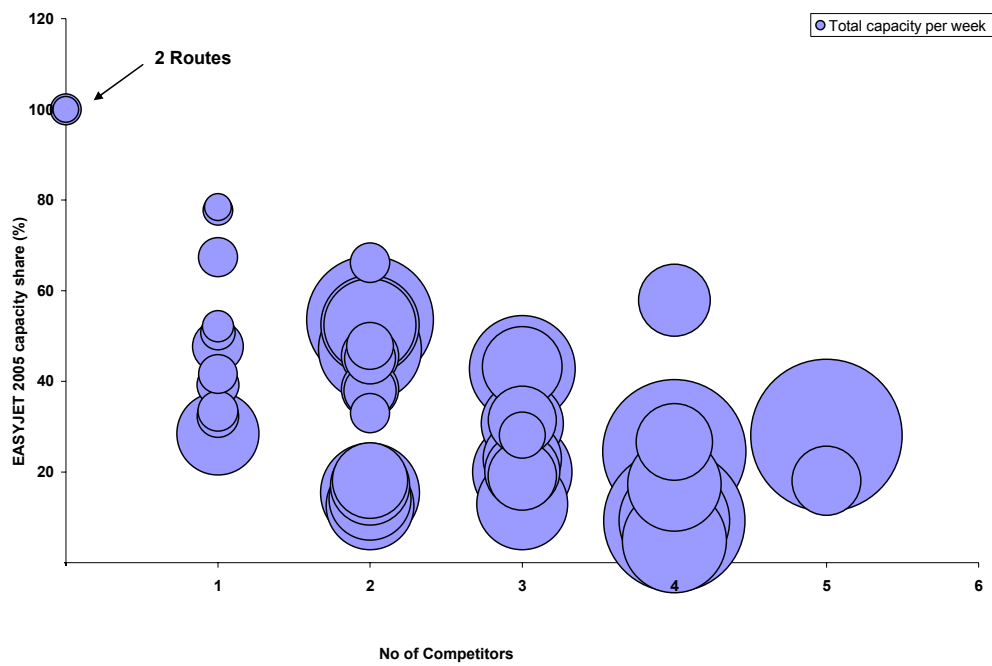
Figure 4 Ryanair Route Structure ex-London, 2005



Source: OAG

The figure shows the large number of thin routes that Ryanair dominates. The airline retains full market share on over half its routes from London. On other routes, it provides more than half the capacity on some twelve of the smaller ones, but faces significant growth in competition on larger routes.

Figure 5 easyJet Route Structure, ex-London, 2005



Source: OAG

Figure 5 shows that on more than half easyJet's routes the airline faces three or more competitors. Easyjet's strategy is aimed at providing an alternative short-haul service for business travellers, leading it to focus mainly on larger routes, where it offers higher frequency as a competitive tactic.

SECTION 4

AIR TRAFFIC

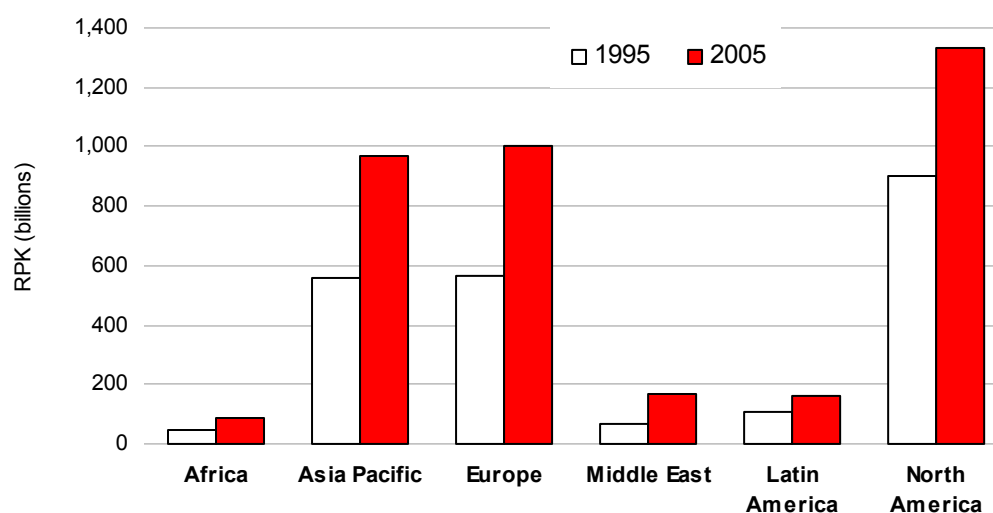
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4. Air traffic

4.1 Scheduled world overview

ICAO reported continued resilience in world airline scheduled passenger traffic in 2005, following the strong rebound witnessed in 2004 after three years of poor performance. Overall, 2005 passenger traffic was some 8% above levels achieved in 2004. Figure 6 shows world passenger traffic, carried by scheduled carriers registered in the 189 ICAO subscribing states. The regions shown are those of the airlines' registration. North American, European and Asia/Pacific airlines generate close to 90% of world RPK. European carriers were in second place, after airlines of North America, in both 1995 and ten years' later, in 2005.

Figure 6 Scheduled airline performance, 1995 and 2005

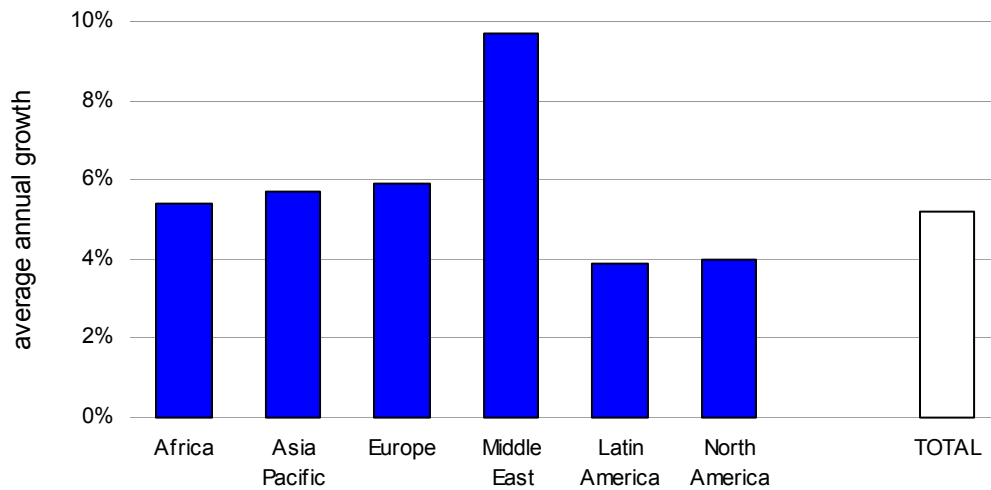


Source: ICAO

Focusing on growth in that ten year period to 2005, Figure 7 underlines the relatively strong increases in RPK seen in all regions, but highlights regional differences. The chart shows that although the average annual growth rate of Europe's carriers was comfortably ahead of North American airlines, it was the Middle East which produced highest levels of growth. New carriers and expanding networks focussing on Middle Eastern hubs meant that the region's airlines increased passenger traffic by an average close to 10% per annum over the ten years.

While the ICAO aggregate growth was just over 5% per annum, Europe was ahead at close to 6% annual increase in RPK. North America, the largest generator of RPK by a considerable margin, was a full percentage point below the aggregate average.

Figure 7 Average annual growth in RPK by region, 1995-2005

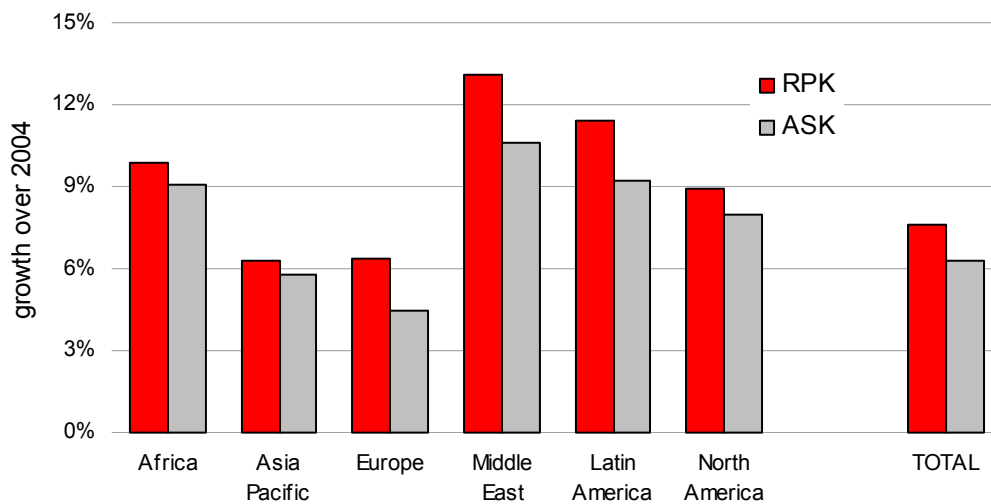


Source: ICAO

IATA reports increases in passenger traffic carried on international scheduled services. The industry average RPK growth over 2004 was 7.6%, while ASK grew by just 6.3%. This improved efficiency, reflected in higher average load-factors, was evident in all regions (Figure 8).

At 4%, European growth in ASK was the lowest in this regional breakdown. However, European airlines generated an increase in RPK above 6%, slightly ahead of Asia/Pacific airlines, indicating that European carriers achieved significantly improved load-factors.

Figure 8 Growth in IATA total international RPK and ASK, 2004-2005



Source: IATA

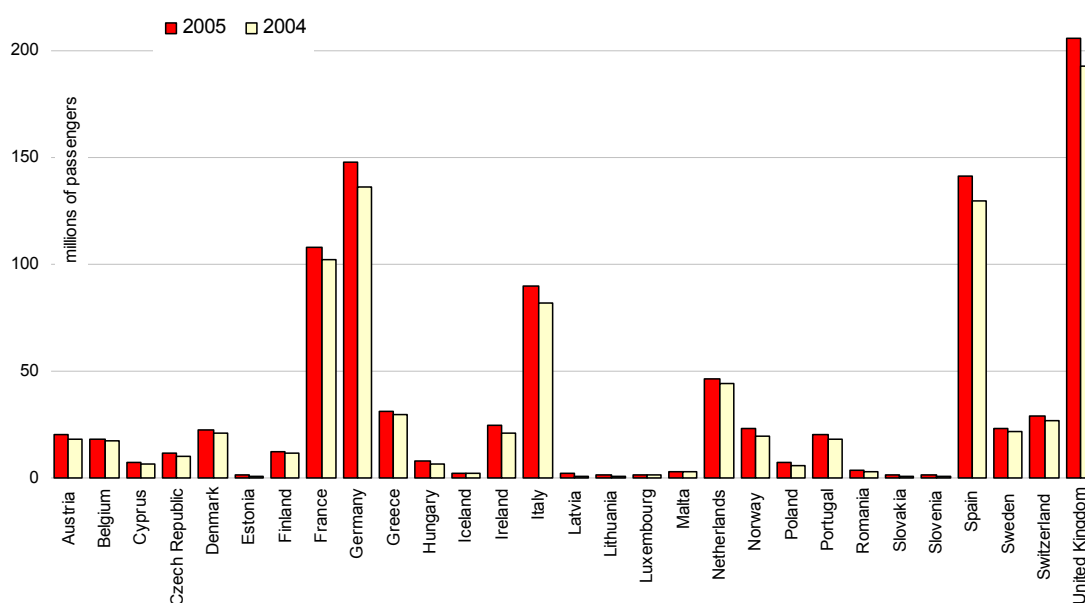
The Middle East was again the leading region in terms growth in capacity and passenger traffic.

4.2 European passenger traffic

Figure 9 shows the passenger traffic generated by European states. There is an element of double-counting, where cross-border intra-EU passengers are recorded as arrivals in one state and as departing passengers in the other. Although there is a strong, positive correlation between traffic volumes and the size of a country, its economic activity and its population, as well as other factors such as tourism flows and the relative isolation of a nation, also have an effect on passenger numbers. Within the EU-25, just under two-thirds of the passenger traffic generated involves airports in four states: UK (22%), Germany (16%), Spain (15%) and France (11%).

The UK's leading position owes much to its dominance in the European development of the market for low-cost air travel, with the leading airlines in this field, easyjet and the Irish company Ryanair, both operating multiple bases in UK. In Germany, this market was developing rapidly in 2005, in both the domestic arena as well as the cross-border intra-EU market. Spain, as Europe's principal leisure destination, attracts the services of many low-cost and charter carriers to its Mediterranean and Canary Island airports, while at the same time the country's well-developed domestic air transport network serves the Balearic and Canary island groups.

Figure 9 European air passenger traffic, 2005 and 2004

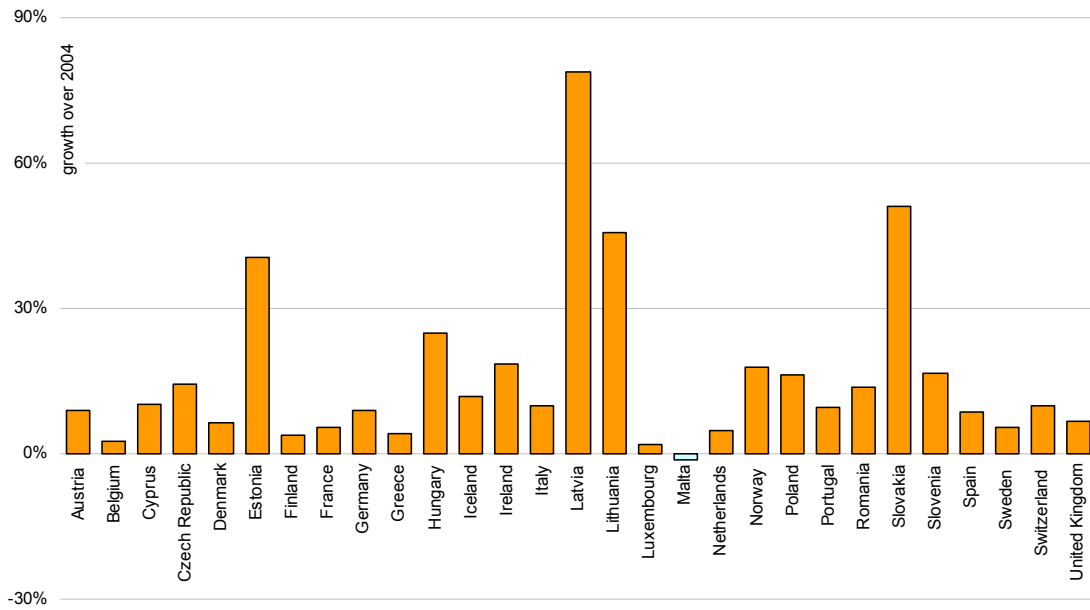


Source: Eurostat

The wide differences in traffic volumes among the countries represented in Figure 9 hide the very high year-on-year growth recorded by countries with relatively low levels of passenger traffic. Figure 10 remedies this, showing the extent to which passenger traffic changed between 2004 and 2005.

Growth rates in the states generating the highest proportion of passengers are relatively low, although in absolute terms they are very large. The greatest growth rates are seen in the accession states, where airlines benefited from more open access to markets, and where passengers were able to travel more freely.

Figure 10 Change in air passenger traffic, 2004-2005



Source: Eurostat

The impact of the growth of low-cost airline activity can be seen clearly. For example, in Slovakia, where SkyEurope established a base in 2002, passenger traffic again registered an increase of over 50% between 2004 and 2005, while Latvia recorded a near doubling in traffic, albeit from a very low base, and the other two Baltic states also recorded very high increases in passenger traffic. Only Malta recorded a decline in passenger traffic. This was a relatively small fall, probably reflecting the changing pattern of tourism generated within Europe.

Figure 11 Extra-EU-25 transport of passengers: % of total in 2005 by region



Source: Eurostat

Figure 11 shows the flow (by region) of EU-25 air passengers travelling outside EU-25. The distribution demonstrates quite clearly the strength of links between the EU countries and the rest of Europe, accounting for one-third of extra-EU passenger transport, and between EU and North America (close to a quarter of the total).

4.2.1 Network carriers

Not surprisingly, the traffic carried by the twenty-six reporting AEA airlines in 2005 mirrored the world picture (Table 7 and Table 8). Their system-wide passenger numbers advanced by 4.5% while passenger-kms rose by 6.1%, indicating an increase in the average passenger trip length. Europe's carriers performed most strongly in terms of RPK on the South Atlantic, where traffic was up by 12.9% over 2004. On the important North Atlantic a 0.8% increase in capacity was met by 2.0% increase in traffic, generating a comfortable increase in passenger load factor of one decimal point, to 82.6%.

European routes (domestic and cross border) produced 78% of AEA airlines' passengers, but just 30% in terms of RPK. This RPK share was very similar to the RPK produced on the North Atlantic, which accounts for only 8.5% of total AEA passengers.

On Asia/Pacific services, passenger numbers and RPK produced were up by 11% and 12% respectively, while a lower increase in capacity supplied (ASK) resulted in average increase of 1.8 decimal points in passenger load factor. This was the second highest traffic growth region, after the South Atlantic.

Table 7 Total passenger traffic of AEA members, 2005

	Passengers <i>thousands</i>	RPK <i>millions</i>	ASK <i>millions</i>	Pax load factor <i>%</i>
Domestic	102.6	55,303	83,595	66.2
Geographical Europe	149.9	155,994	230,333	67.5
Europe / North Africa	3.9	7,720	11,550	66.8
Europe/Middle East	6.5	21,415	29,085	73.6
North Atlantic	27.4	186,681	225,953	82.6
South Atlantic	4.2	36,789	44,580	82.5
Mid Atlantic	6.3	48,530	59,304	81.8
Europe/Rest Africa	7.4	49,714	63,781	77.9
Europe /Far East, Australasia	16.0	134,338	168,602	79.7
Other (non-scheduled)	9.8	22,563	29,008	77.8
SYSTEM-WIDE	334.2	719,273	946,125	76.0

Source: AEA STAR 2006

Figure 12 shows the traffic generated in 2005 and 2004 by the twelve top performing AEA airlines. Air France increased its RPK by 8.4%, squeezing ahead of Lufthansa.

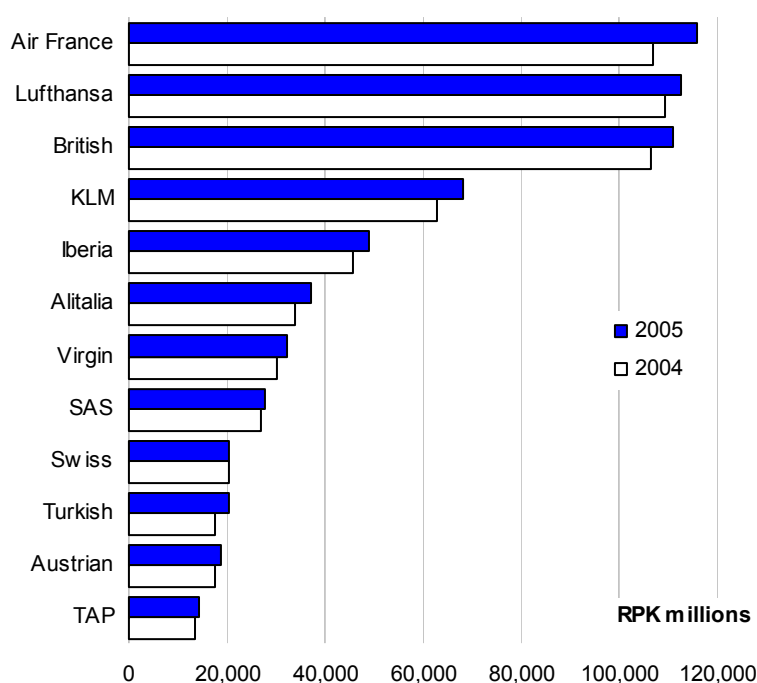
All but one of these twelve airlines experienced growth in 2005. Swiss International posted a small fall in RPK, down by just half of one percent over 2004, itself down 15% over 2003. The average RPK growth among AEA airlines was just over 6.3%. Air France's growth was outstripped by Turkish, where RPK growth topped 17% in 2005.

Table 8 Scheduled passenger services of AEA members, 2005 vs 2004

	Passengers Increase over 2004 (%)	RPK	ASK	Pax load factor (% points)
Domestic	3.7	5.5	4.7	0.5
Geographical Europe	4.9	6.5	3.3	2.0
Europe / North Africa	6.8	6.8	9.1	-1.4
Europe/Middle East	3.1	0.6	-4.9	4.0
North Atlantic	1.5	2.0	0.8	1.0
South Atlantic	13.2	12.9	13.3	-0.3
Mid Atlantic	5.9	6.7	4.3	1.8
Europe/Rest of Africa	3.5	4.6	4.7	-0.1
Europe /Far East, Australasia	10.9	11.6	9.1	1.8
SYSTEM-WIDE	4.5	6.1	4.3	1.3

Source: AEA STAR 2006

Figure 12 Scheduled service RPKs of selected AEA members, 2005 and 2004

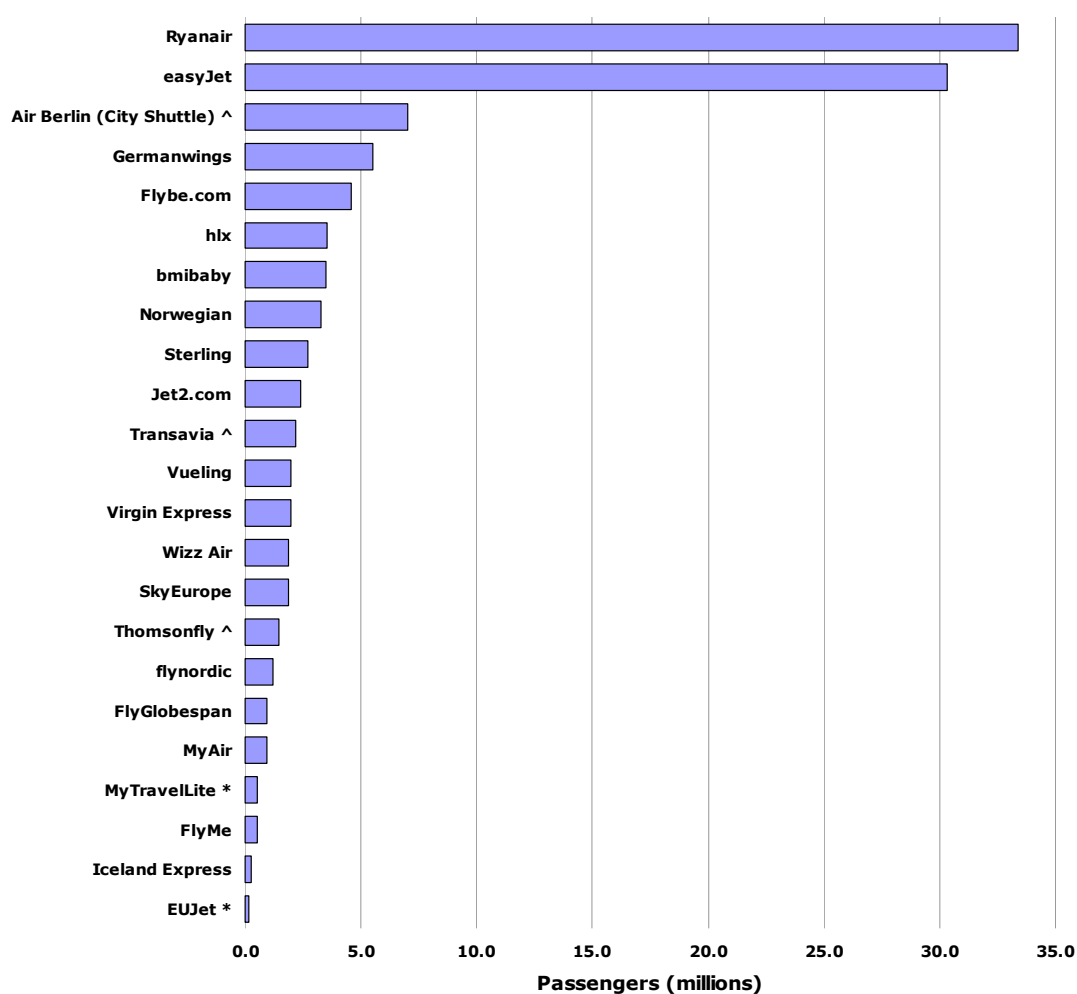


Source: AEA

4.2.2 Low cost carriers (LCCs)

In 2005 the total number of scheduled passengers carried on recognised low-cost airlines on intra-European routes was around 115 million. Figure 13 clearly shows the continued dominance of Ryanair and easyJet. Between them the two airlines carried over 50% of all intra-European low-cost airline passengers. Ryanair and easyJet each carried four times as many passengers as Air Berlin's City Shuttle operations. Air Berlin's total passenger numbers were 13.54 million but this includes all the passengers carried on flight operated primarily on behalf of tour operators. A number of smaller LCCs did not report figures in 2005 for their scheduled operations. These include Smartwings, Centralwings, niki, Blu-Express, Windjet and a revived Volareweb.

Figure 13 Total scheduled passengers by carrier 2005



* Airline ceased operations during 2005

^ Also carried significant numbers of charter passengers

Source: Airline reports, Airline websites, Cranfield estimates

Ryanair continued to grow faster than easyJet in 2005 and thus increased its margin as market leader in terms of passengers flown. Despite some impressive growth rates amongst the smaller LCCs, in terms of volume growth easyJet and Ryanair continued to be the fastest growers.

LCCs established a number of new bases across Europe in 2005. These included:

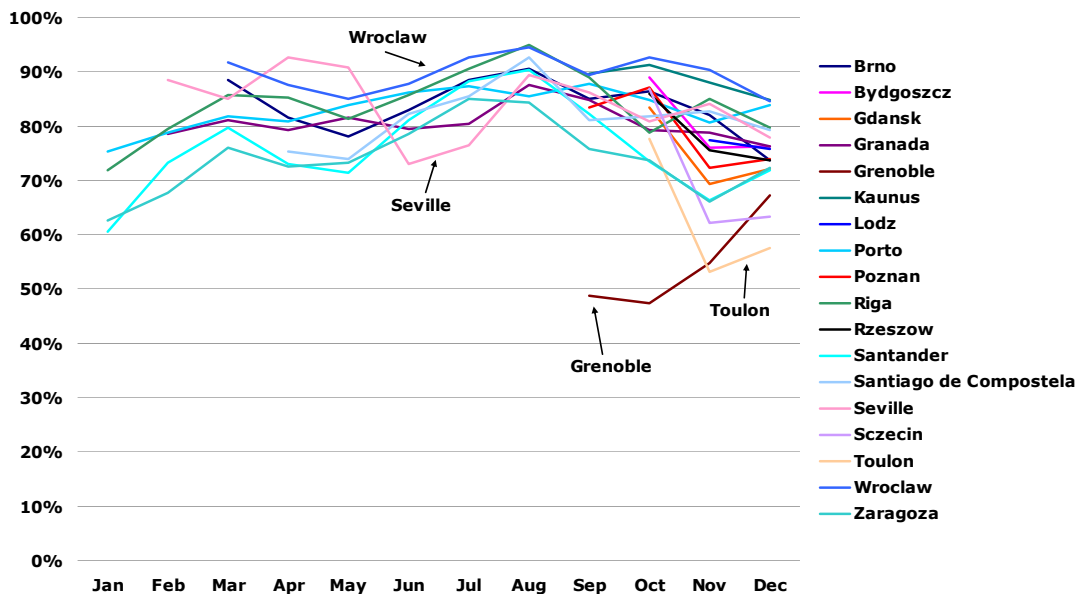
- Bmibaby in Birmingham (7 January)
- easyJet in Basel (17 June)
- Flybe in Norwich (10 February)
- Germanwings in Berlin Schönefeld (5 June) and Hamburg (27 November)
- Jet2.com in Newcastle (4 September)
- MyAir in Bologna (24 June)
- Ryanair in Pisa (April)
- Thomsonfly in Doncaster/Sheffield (28 April) and Bournemouth (22 March)

- Vueling in Madrid (15 November)

All of these bases were in the airline's home country with the exception of Ryanair and easyJet who set up bases in Italy and Switzerland respectively.

Figure 14 and Figure 15 show details of performance, in terms of passenger load factors, for selected routes at Ryanair's main base at London Stansted, and for easyJet at Dortmund, their second base in Germany.

Figure 14 Ryanair load factors on selected London Stansted services 2005

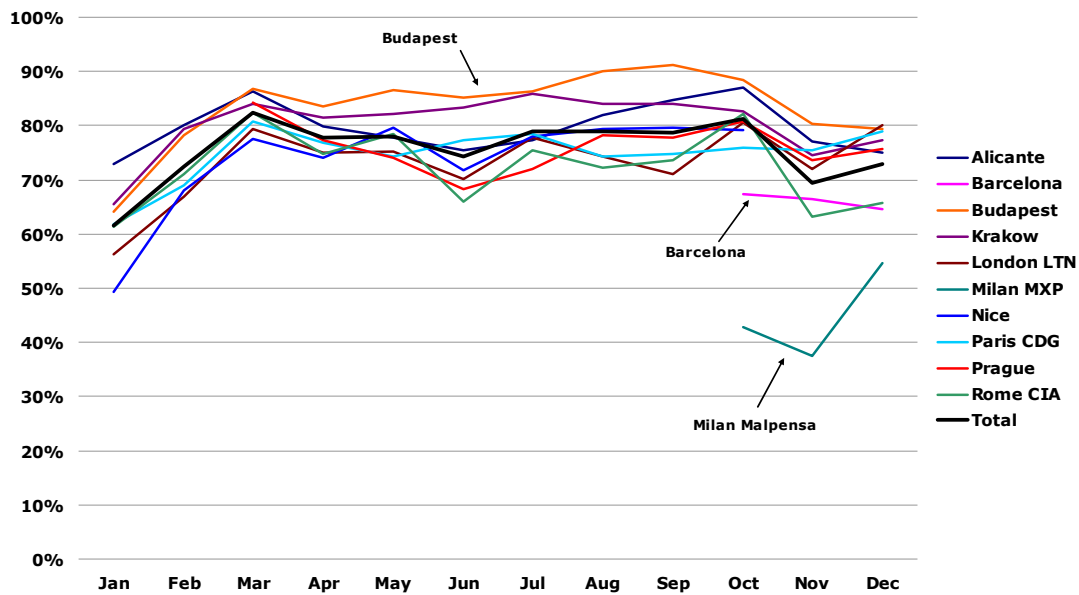


Source: Derived from CAA UK Airport and Punctuality statistics

Figure 14 shows monthly passenger load factors on a selection of routes operated by Ryanair from London Stansted. All of these routes commenced operations during 2005 with the exception of Riga, Santander and Zaragoza which all began in late 2004. All of the destinations were served on at least a daily basis. Ryanair's ability to generate high average load factors as soon as the routes start operating is noticeable with little apparent ramp-up. However, this is achieved initially through very low fares and strong promotional activity. The chart highlights those routes that appear to be underperforming. Notable successes appear to be the routes to Wrocław in Poland and to Kaunas in Lithuania. Ryanair's cheap fares will clearly help consumers in these countries afford air travel, possibly for the first time.

easyJet opened their first base in Germany at Berlin Schönefeld on 28 April 2004. The base has grown rapidly from thirteen routes in the summer of 2004 to twenty-seven routes in summer 2005. A second base was established in Germany, in Dortmund, with services there beginning on 15 July 2004, less than three months after the Berlin base. However, the Dortmund base has grown less rapidly, expanding from just eight routes in summer 2004 to eleven routes in winter 2005. During 2005 new services began from Dortmund to Barcelona, Geneva and Madrid while flights to Nice were dropped for the winter season.

Figure 15 Easyjet load factors on selected Dortmund services, 2005



Source: Derived from destatis figures

The estimated monthly load factor, by route, for the majority of destinations served by easyJet from Dortmund is shown in Figure 15. These load factors (derived from German government statistics available through destatis.com) refer to actual passengers flown rather than passengers booked. Only the route to Palma is not analysed as here the airline competed directly with another carrier and only total route data is publicly available.

Overall it is estimated that easyJet achieved an annual average load factor from its Dortmund flights of around 76% which is very close to what it also achieved from its Berlin operations. The peak in March can be attributed to Easter falling in March in 2005. The challenge of launching new routes can clearly be seen in the performance of the new routes to Barcelona and Milan Malpensa which were launched at the end of October. Milan in particular appears to be struggling to reach the kind of load factor levels that would indicate that the route was profitable.

Thanks to their pricing policies, low-cost airlines are traditionally able to generate demand on new routes very quickly. If a route fails to deliver decent loads when yields are low it is unlikely to generate profits in the longer term. Thus low-cost carriers can often tell within a short space of time whether a new route will ultimately succeed or not.

4.2.3 Charter/Leisure airlines

In 2005 there were 97 charter airlines based in Europe⁵ operating commercial services with aircraft seating over fifty passengers. The average length of time these carriers had been in existence was ten years, with three companies commencing operations during 2005.

⁵ Europe here includes the 25 EU Member States, Bulgaria, Croatia, Iceland, Norway, Romania, Switzerland and Turkey.

Table 9 provides a listing of the 97 carriers; indicating country of registration, date established and fleet size in 2005. As may be seen, the countries with the largest number of passenger charter airlines are the UK (13), Turkey (11), Spain (9), France (8), Germany (8) and Italy (8). The fleets operated by the 97 airlines totalled 826 aircraft, of which 44% were flying for vertically integrated tour operating organizations, 39% for independent companies, and 17% were operated by carriers owned by other airlines. The charter airlines owned by tour operators accounted for 68% of passengers carried by the 56 airlines in 2005 (for which data could be obtained), with 19% travelling on services operated by independent carriers and 13% flying with companies owned by other airlines.

Table 9 Europe's passenger charter airlines in 2005

		Establis hed	Fleet size	Previously known as		Establis hed	Fleet size	Previously known as
Austria	LTU Austria	2004	1		Portugal	EuroAtlantic	1993	8
	MAP	2002	4			Hi Fly	1988	4
Belgium	Jetairfly	2004	7	TUI Airlines Belgium		Luzair	2000	2
	Thomas Cook (Belgium)	2002	5			White	2000	1
Bulgaria	BHAir	2001	7		Romania	Romavia	1991	7
	Bulgarian Air Charter	2000	8		Spain	Air Madrid	2003	6
	VIA	1990	4			Air Plus Comet	1996	10
Croatia	Air Adriatic	2000	6			Futura	1989	19
	Dubrovnik Airline	2005	3			Girjet	2002	4
Cyprus	Eurocypria	1990	4			Hola	2002	3
Czech	Fischer Air	1996	3			<i>Iberworld</i>	1998	10
	Travel Service Czech	1997	8			LTE	1987	4
Denmark	MyTravel A/S	1994	11			Pullmantur Air	2003	3
Finland	Air Finland	2002	3			Visig	2003	1
France	Aigle Azur	1970	6		Sweden	Britannia Nordic	1997	5
	<i>Air Horizons</i>	2000	4			<i>Falcon Air</i>	1986	3
	Air Mediterranee	1997	6			Nordic Airways	2004	5
	Axis Airways	2001	5			Novair	1997	5
	Blue Line	2002	4			Viking	2003	3
	Corsair	1981	11		Switzerland	Belair	2001	3
	Eagle Aviation	1999	2			Edelweiss Air	1995	4
	Star	1995	7			Hello	2004	3
Germany	<i>Aero Flight</i>	2004	5			<i>Privatair</i>	1977	5
	Blue Wings	2002	1		Turkey	Atlasjet International	2001	18
	Condor	1955	23			Fly Air	2002	9
	Condor Berlin	1997	13			Freebird	2001	3
	Germania	1978	-			Inter Airlines	2002	1
	Hamburg Int'al	1998	6			MNG Airlines	1997	25
	Hapagfly	1972	35	Hapag-Lloyd		Onur Air	1992	27
	LTU	1955	25			Pegasus	1990	14
Greece	Greece Airways	2003	1			Saga Airlines	2004	3
Hungary	Travel Service Hungary	2001	1			Sky Airlines	2001	6
Iceland	Air Atlanta Icelandic	1986	35			Sunexpress	1990	10
	Islandsflug	1991	19			World Focus Airline	2004	3
	Jet X	2004	3		UK	Air Atlanta Europe	2002	3
Ireland	EIR Jet	2004	3			Air Scandic	1997	2
Italy	Air Europe	1989	1			Astraeus	2001	9
	Air Italy	2005	2			European Air Charter	1993	10
	Blue Panorama	1998	11			Excel	1994	12
	Eurofly	1989	12			First Choice	1986	30
	Itali Airlines	2003	5			Flightline	1989	8
	Lauda Italia	1992	3			FlyJet	2002	2
	Livingston	2003	6			Monarch	1967	28
	Neos	2001	4			MyTravel	1986	18
Latvia	LAT Charter	1993	3			Thomas Cook (UK)	1998	23
Lithuania	Aurela	1996	1			Thomsonfly	1962	43
Netherlands	Arkefly	2004	4	HollandExel		Titan	1988	9
	Interstate Airlines	2005	1					
	Martinair	1958	21					
	Transavia	1966	28					

Airlines in italics ceased operations in 2005

Sources: JP Airline-Fleets International, ICAO, IATA, ATI, Airline Business, DGAC France, UK CAA.

Table 10 provides 2005 traffic statistics for 51 of the 97 carriers referred to in the previous table, data being unobtainable for the remaining airlines.

Table 10 Europe's charter airlines' demand in 2005, and change over 2004

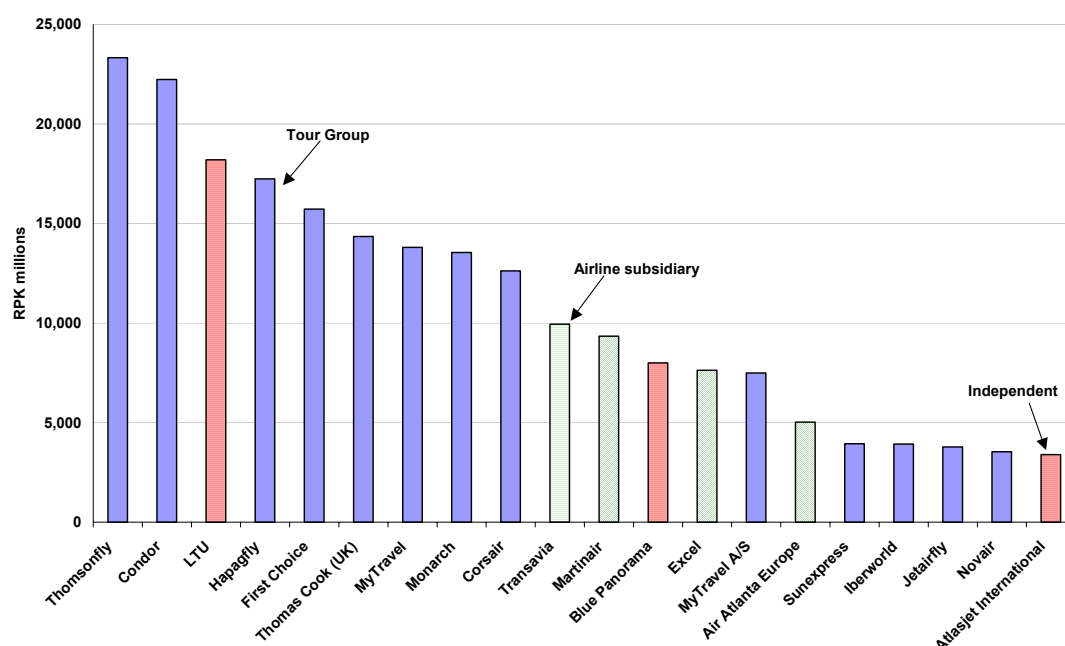
Airlines	Passengers		RPK	
	millions	% change	millions	% change
Thomsonfly	9.550	10.3%	23,337	9.8%
Condor	7.376	3.7%	22,245	3.4%
Hapagfly	7.310	3.0%	17,246	3.7%
First Choice	5.999	-1.0%	15,729	2.0%
LTU	5.600	-5.4%	18,206	-1.0%
Monarch	5.403	7.4%	13,549	5.8%
Thomas Cook (UK)	4.937	-1.3%	14,352	0.1%
Transavia	4.800	19.1%	9,946	32.5%
MyTravel	4.385	-38.8%	13,808	-24.3%
Atlasjet International	2.710	163.1%	3,395	n/a
Excel	2.591	10.2%	7,636	18.2%
MyTravel A/S	2.100	-6.3%	7,500	-7.7%
Corsair	2.029	-1.5%	12,623	2.2%
Martinair	1.890	4.4%	9,350	17.6%
Travel Service Czech	1.810	39.2%	3,261	38.9%
Sunexpress	1.700	25.0%	3,938	27.2%
ArkeFly	1.560		1,560	
Futura	1.558	-8.3%	3,341	-13.1%
Jetairfly	1.400	44.3%	3,780	58.8%
Iberworld	1.166	-13.6%	3,923	2.3%
World Focus Airline	1.100	57.1%	n/a	n/a
Blue Panorama	1.020	56.9%	7,998	56.0%
Thomas Cook (Belgium)	1.000	3.1%	2,375	-0.3%
Fly Air	0.965	-16.8%	1,958	-22.4%
Britannia Nordic	0.950	-17.4%	3,272	-19.4%
Aigle Azur	0.928	23.7%	1,593	38.9%
Air Mediterranee	0.878	8.4%	1,722	8.2%
LTE	0.875	2.9%	2,127	43.8%
Star	0.855	4.3%	2,759	-10.3%
Astraeus	0.800	-16.7%	2,948	41.2%
Bulgarian Air Charter	0.740	184.7%	1,262	n/a
Hamburg Int'l	0.730	9.0%	1,208	13.3%
Air Horizons	0.654	5.5%	n/a	n/a
Edelweiss Air	0.574	-2.7%	1,879	-20.5%
Air Atlanta Europe	0.553	28.5%	5,026	12.7%
Neos	0.528	7.7%	1,727	44.9%
Livingston	0.522	-13.0%	1,338	-4.5%
Air Adriatic	0.440	76.0%	660	152.9%
Axis Airways	0.409	140.6%	914	234.8%
Novair	0.400	0.0%	3,542	13.7%
Belair	0.373	-1.8%	1,161	0.3%
Blue Line	0.364	102.2%	n/a	n/a
European Air Charter	0.328	5.8%	1,511	7.7%
BHAir	0.320	6.7%	n/a	n/a
FlyJet	0.306	33.2%	952	26.0%
Lauda Italia	0.285	-30.5%	2,362	-30.3%
Titan	0.202	188.2%	323	41.6%
Flightline	0.189	25.8%	141	26.7%
EuroAtlantic	0.114	-36.4%	387	-6.0%
Eagle Aviation	0.046	-48.9%	n/a	n/a
Romavia	0.027	169.6%	32	102.6%
TOTAL	93.349		259,902	

Sources: JP Airline-Fleets International, ICAO, IATA, ATI, Airline Business, DGAC France, UK CAA.

Overall, the number of passengers carried by these 51 companies increased by 6.3% in 2005 compared to the previous year. In terms of RPKs, the equivalent increase was 6.7%.

The top 20 airlines accounted for 81.3% of the passengers carried by these 51 carriers and 80.3% of RPKs. Figure 16 ranks these 20 carriers in terms of RPKs, indicating which form part of a major tour-operating group, which are independent and which are owned by another airline.

Figure 16 Top 20 European charter airlines in RPKs in 2005



Sources: JP Airline-Fleets International, ICAO, IATA, ATI, Airline Business, DGAC France, UK CAA.

Key factors affecting operating and financial performance in 2005

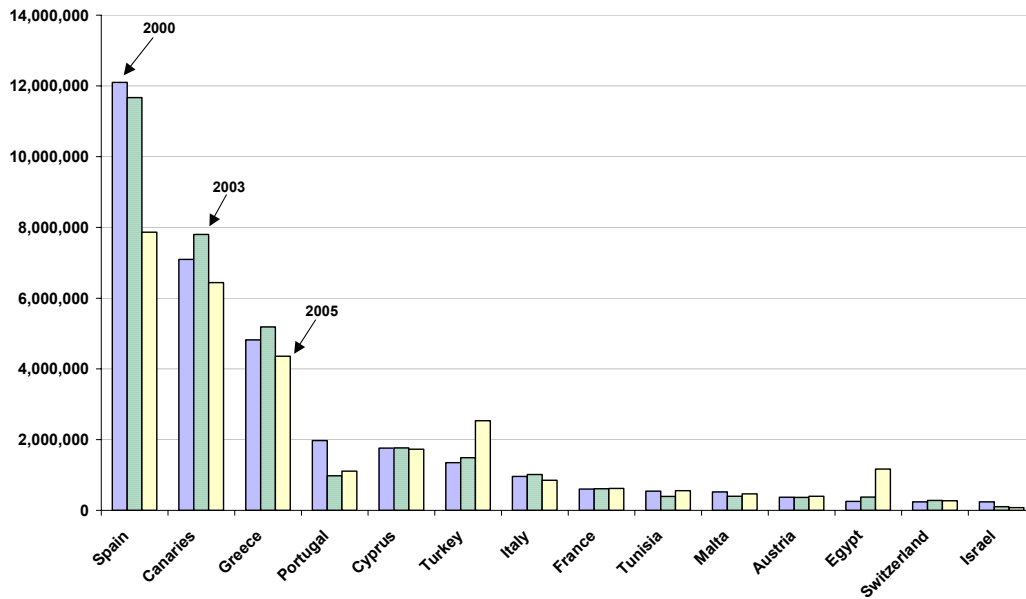
The much greater flexibility provided by the low cost scheduled airlines (LCC) in short haul markets is increasingly attracting travellers away from the conventional charter product. Most charter carriers have responded to the challenge of LCC by developing their own Internet sites providing consumers with a similar supply of information on fares and seat availability. Dynamic packaging has become the order of the day with the large tour operating organisations, empowering their clientele to assemble their own holiday packages. Two distinct strategies have been apparent in the ways in which the major tour operators have responded to LCC. One response has involved the setting up of no-frills scheduled subsidiaries, while others have sought to reduce their reliance on traditional short haul markets focussing instead on longer haul destinations with improved product features, such as increased seat pitch.

The rate of decline in demand for charter services in Europe's short haul markets has increased in 2005. For example, while the number of package holidays abroad taken by UK residents fell by 3.4% between 2004 and 2005, those involving EU

destinations declined by 8.2%. The number of charter passengers carried to and from the UK fell by 6.7% to 33.3 million in 2005, a drop of 2.4 million over the previous year.⁶

The decline in charter demand has been particularly apparent in the largest short-haul markets, with the most popular destinations for UK passengers in Portugal and Spain experiencing significant falls in traffic since 2003.

Figure 17 UK short-haul charter passengers



Source: UK CAA.

4.3 Air Cargo

4.3.1 European overview

In 2005, Eurostat records over 10.8 million tonnes of freight and mail were transported within the EU-15, and between those countries and other nations. This represented an increase of 3.9% over the amount carried in the previous year, and an average annual growth of 6.6% since 2003.

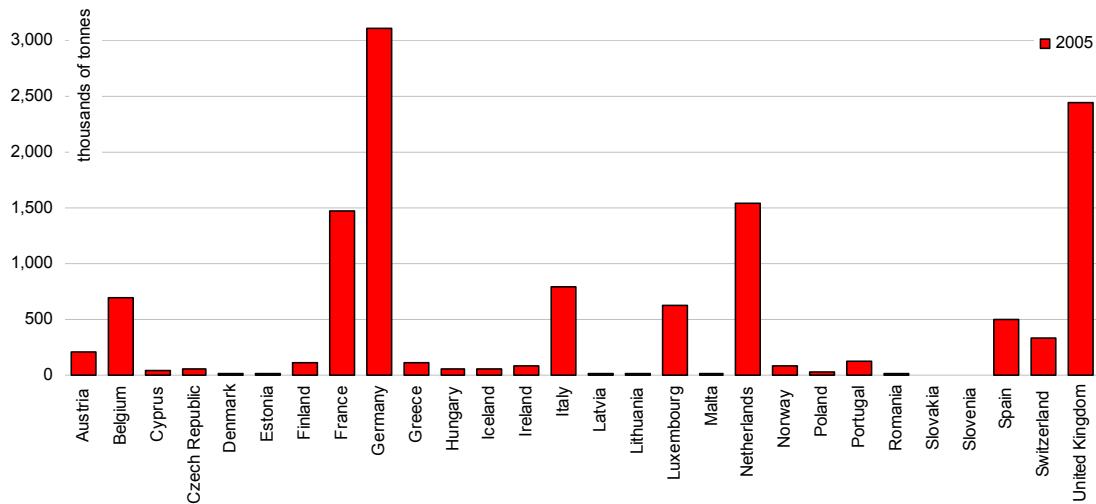
As in the case of passenger traffic, the overall figures mask very great differences in the traffic generated by states (Figure 18). Within the EU-25, over half of cargo traffic generated involves airports in just three states: Germany (25%), UK (20%), and France (12%).

There are great differences in the year-on-year rates of growth in cargo traffic among the countries represented in Figure 18. Figure 19 shows the extent to which cargo volumes changed between 2004 and 2005.

⁶ Excludes oil rig traffic.

The accession states appear to have generated the greatest increases in cargo transported over the one year period, recovering from a relatively poor performance in 2004. Estonia, Latvia, Lithuania recorded increases in cargo traffic of over 75%, while Slovakia retreated after its heady performance the previous year (down 50% from 2004).

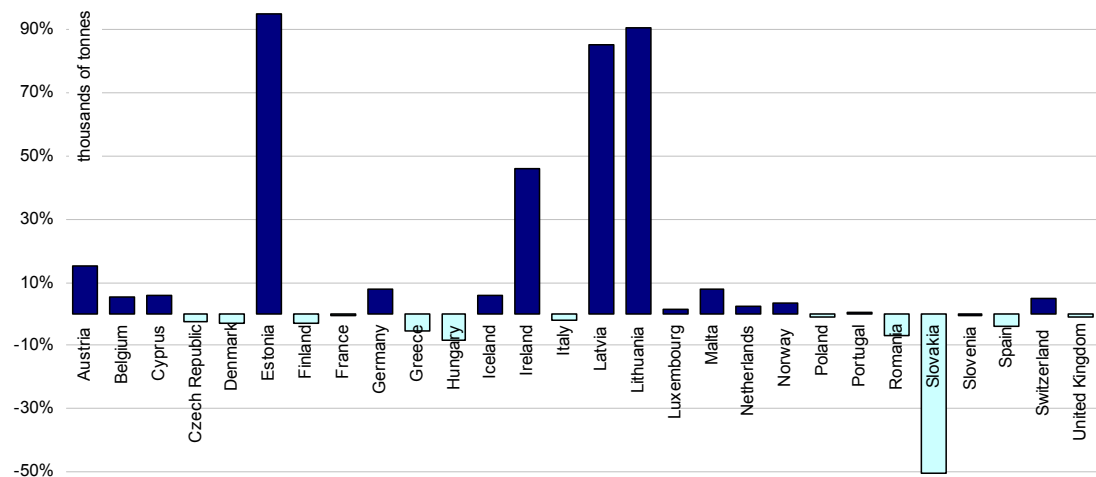
Figure 18 European air freight and mail transport by state, 2005



Source: Eurostat

The main players in the market showed mixed performance compared with 2003. Germany was up 8% but UK and France were both down by 1%.

Figure 19 Annual growth in air freight and mail, 2004-2005



Source: Eurostat

4.3.2 European airlines

AEA freight traffic moved ahead in 2005, fuelled by growth of almost 6% on the important Far East and Australasian routes. This was driven by buoyant export growth from China and other Asian manufacturing countries. High growth also occurred on South American routes and between Europe and sub-Saharan Africa, but

fell quite sharply within European domestic markets, and was down slightly on the routes across the North Atlantic, the second most important region.

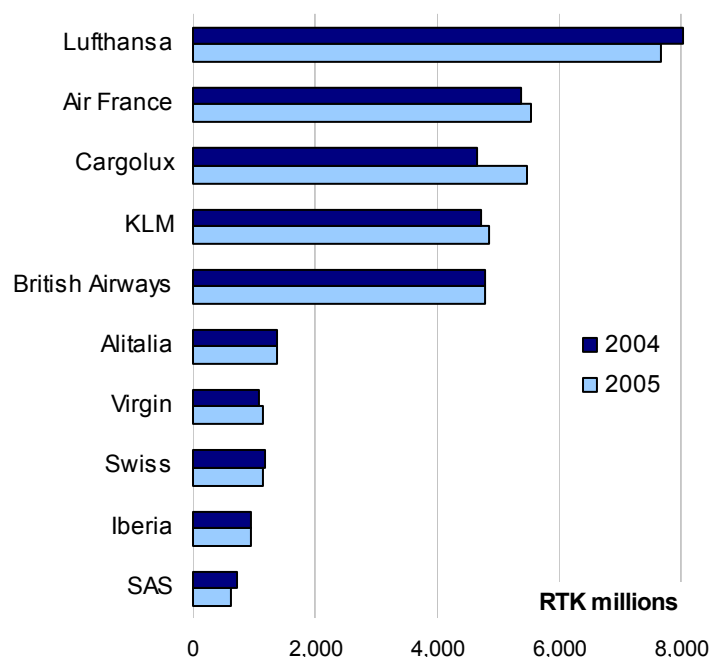
Table 11 Air freight traffic carried by AEA carriers, 2005 vs 2004

	FTKs m	
	2005	% change
Domestic	134.6	-6.9
Geographical Europe	809.4	3.0
Europe/North Africa, Mid-East	1,102.3	1.0
North Atlantic	9,961.3	-0.3
South/Mid Atlantic	3,725.4	6.5
Europe/Rest of Africa	2,919.8	7.6
Europe/Far East, Australasia	16,852.2	6.0
Other	71.5	
TOTAL	35,576.5	2.3

Source: AEA

The top ten AEA air cargo carriers' performance in 2005 is shown in Figure 20. These accounted for 94% of total AEA traffic for that year. The top five which accounted for 80% of the total all reported strong increases in traffic compared to the previous year, especially Cargolux.

Figure 20 Top 12 AEA airline cargo traffic in 2005 and 2004



Source: AEA

4.3.3 Integrators

DHL Express division increased its revenues by 4.1% in 2005 to €18.3 billion. Acquisitions made the largest contribution to this growth, with Airborne (the US air cargo carrier) taken over the previous year. Margins on sales (EBIT divided by revenues) averaged 15.8% in 2005 compared to 16.3% in 2004. DHL Express accounts for 41% of group turnover, and worldwide employed 132,000 staff,

operating at 36 hubs with 72,000 vehicles and 420 aircraft (operating for DHL). Europe accounted for 64% of turnover in 2004, and was up by only 0.1%. The highest growth occurred in the Asia/Pacific region (+23%), which accounted for 13% of total revenue for the Express Division in 2005. The Americas region generated around one quarter of turnover and grew by 5.8% in 2005. In recent years DHL's Courier, Express and Parcels (CEP) business has grown by around 5-6% in their six core countries of Europe, and at 7-8% in foreign countries. In 2005, DHL formed a joint venture with Lufthansa Cargo called 'LifeConEx' based in Florida, offering the temperature-controlled specialist transport of pharmaceuticals, biotech and healthcare products.

FedEx's international freight business, most of which goes by air, grew rapidly in the nine months to end February 2006, with revenues up 20% compared to the same period in 2005. US domestic freight also advanced by 20% for the same period from a much higher base. In terms of revenues, its International Priority package business increased strongly by 13% with the US domestic express business up by only 7%. For traditional freight, the growth occurred in the US, with a downturn in international business. FedEx's operations on the US Gulf Coast were badly affected by a number of hurricanes between June and the end of 2005.

UPS's International Package revenue improved to \$1.2 billion, or 17.2%, for the year 2005 versus 2004, primarily due to the 13.9% volume growth for export products and revenue per piece improvements. The improvements in revenue per piece were impacted by rate changes, currency fluctuations, and the fuel surcharge applied to international shipments. Revenue increased \$121m during the year due to currency fluctuations, net of hedging activity, and also increased by \$133m during the year due to business acquisitions.

UPS's export volume increased throughout the world, with strong growth in Asia and Europe. Asian export volume, which increased 29% over 2005, was driven by export growth from China. Additional flights were operated from Shanghai that were added in the fourth quarter of 2004, and express air service between the U.S. and Guangzhou, China that began in the second quarter of 2005.

UPS's European export volume increased 13% for the year, while export volume from the U.S. and Americas also showed solid increases. International volume to/from Europe increased 12.4% for the year, due to volume growth in Canada and Europe, which also benefited from the acquisition of Messenger Service Stolica S.A. in Poland during the second quarter of 2005, and Lynx Express Ltd. in the United Kingdom in the third quarter of 2005. Excluding the impact of acquisitions, international volume increased 3.7%. UPS employs around 32,000 staff in Europe, and has a fleet of more than 7,000 ground vehicles. It operates 150 intra-European flight segments and 133 on intercontinental routes, both centred on its hub at Cologne-Bonn Airport. Worldwide it operates 268 of its own aircraft and charters a further 309.

The Deutsche Post World Net annual report for 2005 estimated the European CEP market to be worth €27.5 billion in 2004, of which DHL's share was 20%, the French Post Office (La Poste) 12%, TNT 11%, UPS 8%, the UK Royal Mail 8% and FedEx 2%.

4.3.4 Other world regions

World freight tonne-kms increased by 2.5% in 2005 compared to 2004, reaching 142.6 billion. Of this total, 83% was carried on international services. Domestic air

cargo rose by only 0.8% in 2005 compared to international growth of 2.9%. Table 12 shows how the growth rates varied by region, and also adds mail traffic.

Table 12 Growth of world air cargo traffic by regional, 2005 vs 2004

<i>International & Domestic</i>	% change 2005 vs 2004	
	<i>Freight tonne-kms</i>	<i>Mail tonne-kms</i>
Africa	+ 6.1	+ 18.8
Asia & Pacific	+ 3.9	+ 7.8
Europe	+ 2.5	+ 0.8
Middle East	+ 12.4	- 0.4
Latin America/Caribbean	- 2.7	+ 10.0
North America	- 0.6	- 2.6
Worldwide	+ 2.5	+ 1.9

Source: ICAO Annual Review of Civil Aviation, 2005

The total freight tonne-kms carried by the members of Association of Asia Pacific Airlines (AAPA) amounted to 51.5 billion in 2005, up 3.6% from the previous calendar year. Their freight load factor fell from 67.4% in 2004 to 66.4% in 2005. Airlines with the highest freight load factors over the year were Korean Air (76.9%), Asiana (73.4%), China Airlines (73.2%), EVA Air (72.9%) and Dragonair (72.7%). Dragonair registered the fastest growth in freight tonne-km traffic (up 31.2%), followed closely by Qantas (up 30%). Garuda Indonesia posted a decline in cargo traffic of 14.2%.

Freight and mail traffic (tonne-kms) carried by the members of the Air Transport Association of America (including six all-cargo carriers) totalled 51.9 billion in 2005, up by 0.2% compared to 2004. A fall in domestic traffic of 1.6% was offset by an increase in international air cargo traffic of 1.9%. Just under half of total FTKs were carried on domestic routes, with 26% to/from Asia/Pacific and 20% on the North Atlantic. FedEx accounted for 30.4% of the 2005 total, Atlas/Polar 17.9% and UPS 17.5%. Scheduled cargo yield was up by 15.9% in 2005, helped by a number of fuel surcharges throughout the year.

The largest US air cargo hub was Memphis, home of FedEx, with 3.6m tonnes of cargo handled in 2005, followed by Anchorage with 2.6m tonnes and Los Angeles with 1.9m tonnes.

The Arab Air Carrier Association (AACO) reported an increase in cargo tonnes carried of 20% in 2005 over 2004, reaching 2.6m tonnes. Almost all of this (97%) was carried on international services. Emirates Airlines alone accounted for just over one million tonnes of air cargo.

SECTION 5

AIRLINE FINANCIAL PERFORMANCE

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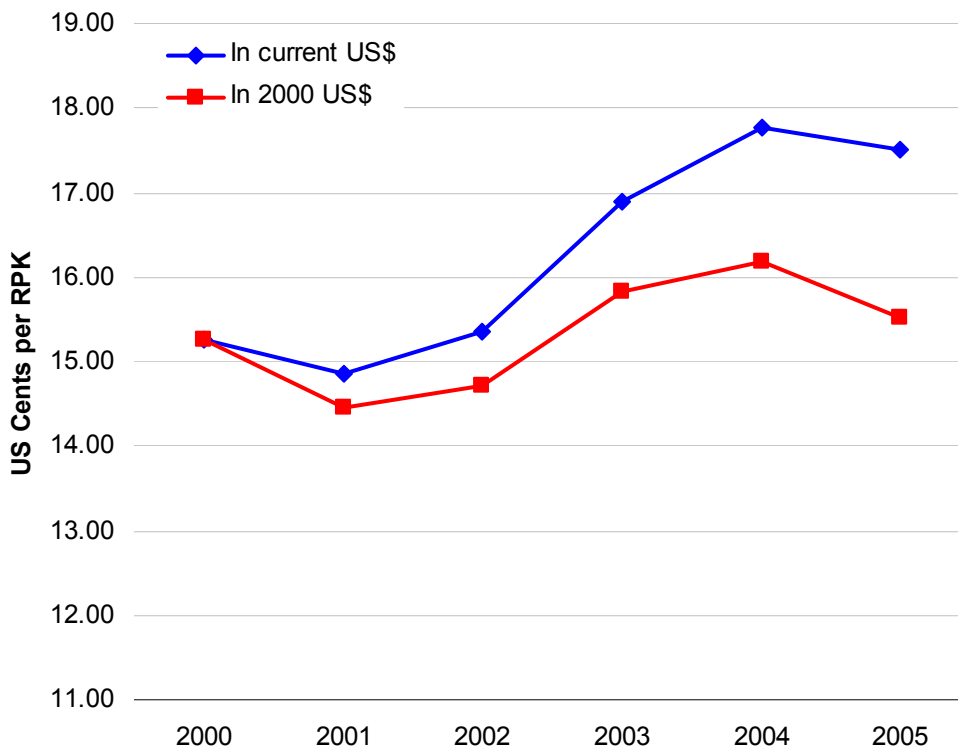
5. Airline financial performance

5.1 Network airlines

5.1.1 Yields and air fares

The growth of low-cost airlines in Europe and the increase in the use of internet as a primary method of search and travel booking have put great pressure on airline yields.

Figure 21 Passenger yields in current and constant USD: AEA member airlines' domestic and geographical Europe operations

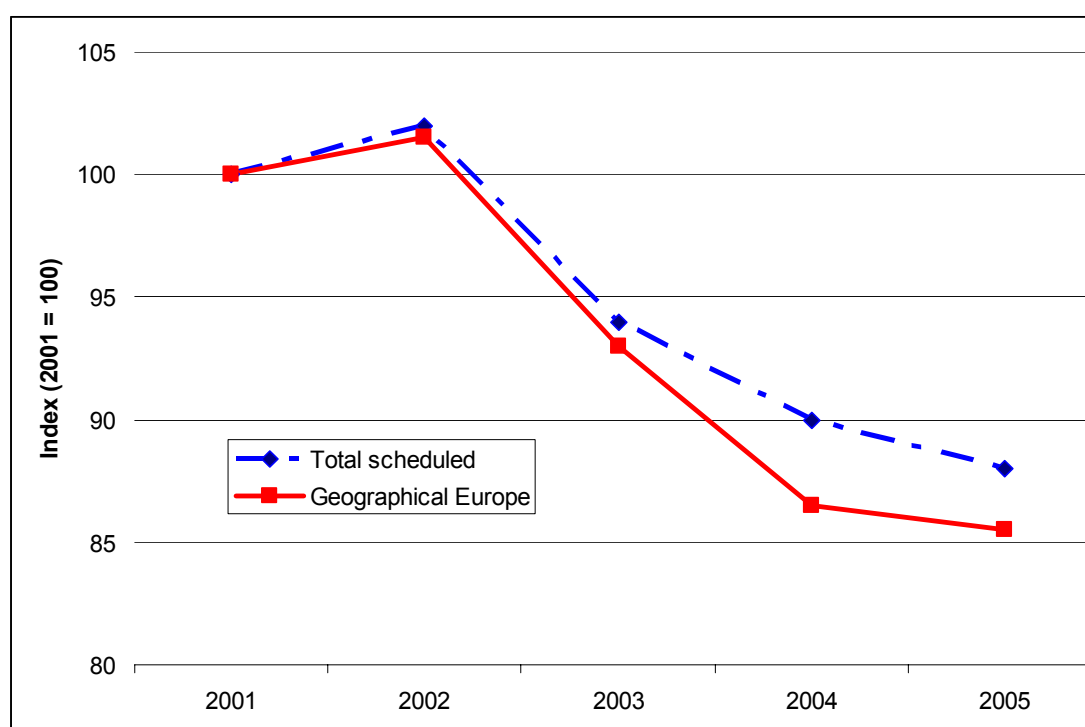


Source: AEA STARS 2006

However, somewhat unexpectedly yields have not fallen in real terms over the period 2000 to 2005 expressed in US dollars, after converting them at current exchange rates and adjusting for changes in the US consumer price index (Figure 21). Fuel surcharges have been successfully applied both by network airlines (and some LCCs), and their impact is evident from this trend, as is the higher US\$ conversion rates up to 2004. On the other hand, for 2005 versus 2004, current dollar yields fell by 2%, and with the US price index rising by just under 3%, yields in real terms fell by 5%.

The impact of exchange rates has been removed from the next chart (Figure 22), where the fall in average yields is much more evident. Thus, the downward trend in yields, both for all international routes and within Europe continues, in spite of from the inclusion of revenues from fuel surcharges, especially between 2002 and 2004.

Figure 22 Passenger yields in current price € - AEA member airlines



Source: AEA STARS 2006

Table 13 shows how overall yields, both passenger and cargo, have changed in 2005 for the major European network airlines. Fuel surcharges are included in the revenues used to calculate these yields, and this helped British Airways, Iberia and Lufthansa to register reasonably good increases, and to a lesser extent Air France-KLM. British Airways were helped by an upward trend in premium traffic, especially on long-haul routes, but its longer average stage length would have reduced its yield..

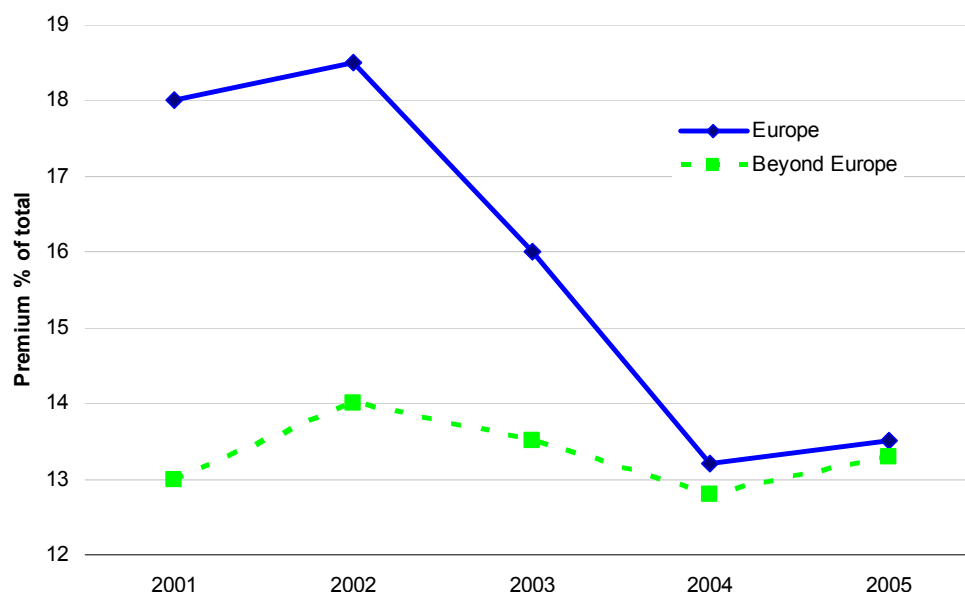
Table 13 Total revenue (US\$) per RTK - selected European network airlines

	2005	2004	2005 vs 04 %
AIR FRANCE-KLM	93.5	91.3	2.3
BRITISH AIRWAYS	94.6	91.1	3.8
FINNAIR	169.8	169.5	0.2
IBERIA GROUP	112.6	108.4	3.8
LUFTHANSA	77.5	74.3	4.3
SAS	142.3	145.9	-2.5
SWISS	92.5	95.9	-3.5

Source: ICAO and airline annual reports

SAS and Swiss experienced a decline in overall yields compared with 2004, with little change in sector lengths but operating in a very competitive environment, and both airlines more dependent on intra-European markets.

Figure 23 Premium passengers as a % of total - AEA member airlines



Source: AEA 2006

Figure 23 illustrates one of the major factors contributing to an erosion in AEA airline yields. The percentage of passengers travelling in premium classes has declined sharply since 2002, such that only some 13.5% of passengers with Europe travel in business class. On long-haul service the decline has been much less marked, and there is some evidence of increasing demand for premium-class travel.

5.1.2 Costs

Table 14 shows labour trends for the following European network airlines:

Aer Lingus, Air France-KLM, Alitalia, Austrian, British Airways, Czech Airlines, Finnair, Iberia, Icelandair, LOT Polish Airlines, Lufthansa, Malev, SAS, Swiss, Turkish and TAP Air Portugal

It can be seen that total employment was unchanged in 2005. Some carriers such as Alitalia reduced their headcount, and others such as Malev outsourced both ground handling and fuel supply with significant staff savings.

Table 14 Labour costs and productivity: 16 European airlines, 2004 vs 2005

	2005	2004	%(pts) change
Total employees (year average x 000)	311,431	311,542	0.0
Total labour costs (US\$m)	23,250	23,106	0.6
Average cost per employee (\$)	74,654	74,167	0.7
Average ATKs per employee	452,633	432,282	4.7
Unit labour costs (US cents)	16.5	17.2	-3.9

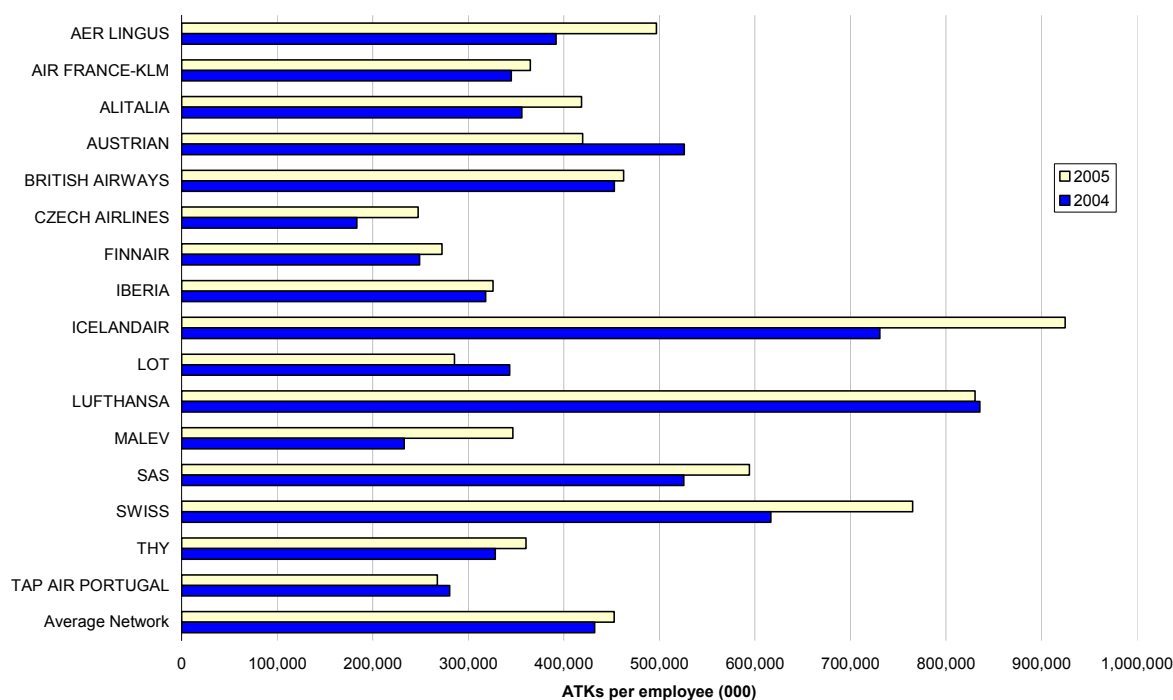
Source: ICAO and airline annual reports

On the other hand, some additions were noted at major carriers BA, Lufthansa and Iberia, with the Air France-KLM annual equivalents roughly unchanged.

Total labour costs for the sample of the 16 airlines rose slightly by 0.6% in 2005 to reach US\$23.3 billion, with no significant change in the US dollar/€ exchange rate. Average cost per employee was little changed at US\$74,600, while the European rate of inflation in the euro zone rose by around 3%. Productivity was up by 4.7%. Some of this gain may have been illusory since outsourcing switches the emphasis from managing labour to managing suppliers. However, the resultant reduction in unit labour costs of 4% was welcomed in a year of rapidly rising fuel costs. It could even be argued that rising fuel costs helped airline management reduce other costs, the most significant being labour.

Figure 24 shows labour productivity, expressed as ATKs per employee, for 16 of the largest European airlines. Changes between 2004 and 2005 are indicated, with Aer Lingus, Icelandair and Swiss improving the most. Average sector length is one factor explaining differences, but only just over 50% of such variations could be accounted for by this single factor. Austrian Airlines experienced a fall in productivity partly as a result of the addition of Slovak Airlines to the group, but also because of additions to their mainline staff in a year of low growth in output.

Figure 24 Labour productivity for selected network carriers, 2004 v 2005

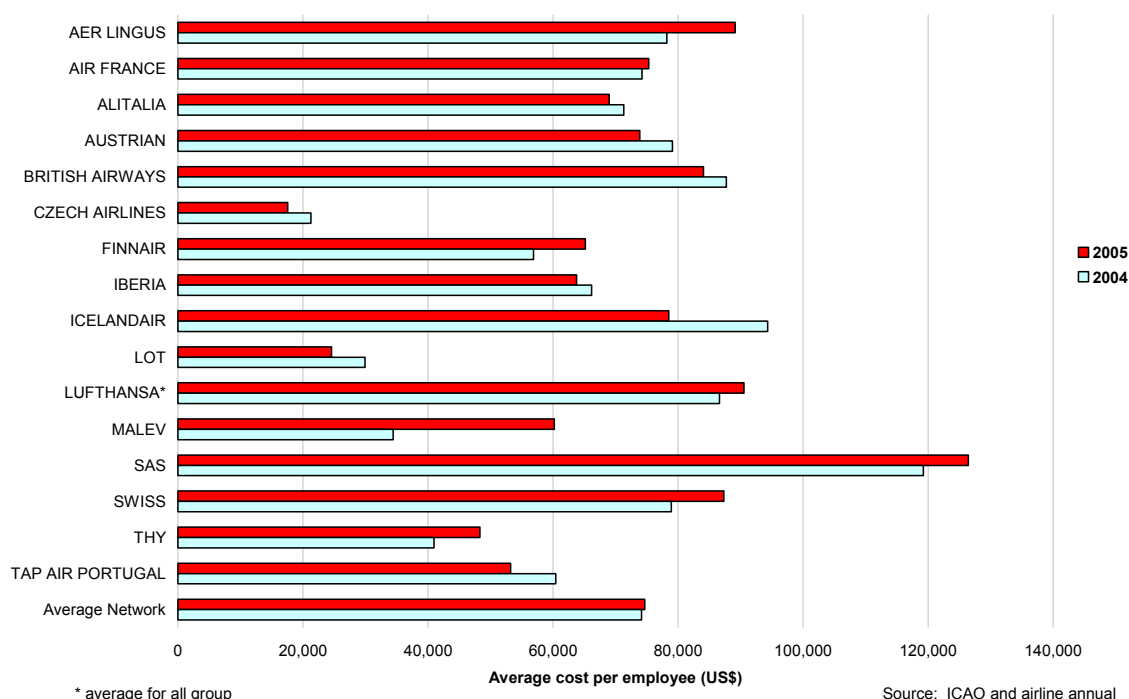


Source: ICAO and airline annual

The other dimension of unit labour costs is the average cost per employee. This is shown in Figure 25, most of the data extracted from both airline annual reports and the ICAO Personnel statistical series. Scandinavia and Switzerland are high wage countries, and their airlines are no exception to this. Finland is also high cost, but Finnair's average was not so high: this might be explained by the staff working for travel and tour elements to Finnair, which tend to be much lower paid than many of the scheduled airline functions.

Airlines with the largest increases were Aer Lingus, Turkish and Malev. The latter would have been helped by the outsourcing of lower paid handling staff. Icelandair and Czech Airlines experienced some reductions.

Figure 25 Cost per employee for selected network carriers, 2004 v 2005



5.1.3 Financial results

The financial results of the sixteen European network airlines are analysed below, followed by airlines from the other two largest regions of the world: USA and Asia. The ICAO world scheduled airline results for 2005 indicated a preliminary operating profit of US\$4.3 billion, an operating margin of only 1%.

Table 15 Financial results: major European network carriers

	2005*	2004*	Change (%pts)
Operating margin (%)	2.9	2.1	0.8
Total revenue per RTK (US cents)	97.5	92.8	5.1
Operating cost per ATK (US cents)	66.3	62.7	5.7
Overall load factor (%)	69.8	69.0	0.8
Debt/equity ratio	2.1	2.6	-18.1
Pre-tax profit as % long-term capital	4.8	3.4	1.4
After tax profit as % equity	10.2	9.9	n/a
Operating leases as % long-term capital	32.0	32.4	-0.4
Average sector length (kms)**	1,301.0	1,326.0	-1.9

* Aggregate of airlines reporting different financial year ends: largest part of FY falling in 2004 or 2005
** based on IATA data for calendar year

Table 15 summarises the financial results for the twenty largest European network carriers for which data was available. Notable omissions were Air Malta and Cyprus Airways, as well as the airlines from the Baltic states. These are the largest AEA airlines in terms of passenger-kms apart from Olympic Airways (no data) and Spanair

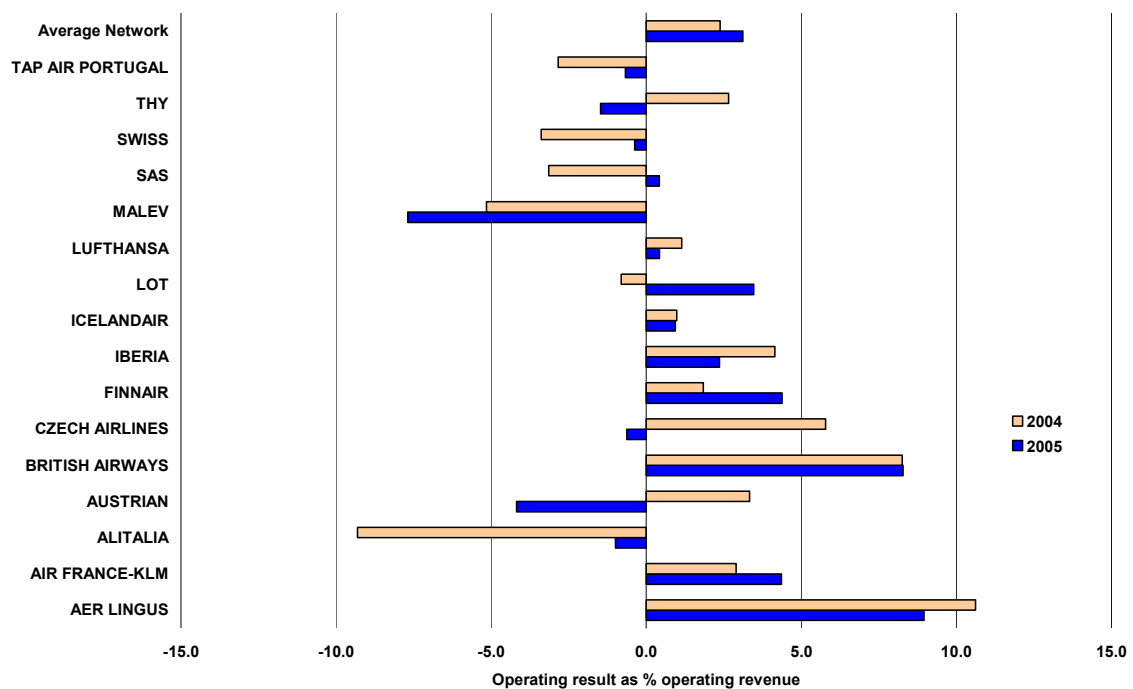
(part of SAS group). The table shows that the European airlines achieved a small margin of 3% in 2005, up almost 1% point compared to 2004, in a difficult year of large increases in fuel costs. This however disguises a large variation across the sample (Figure 26). The improvement was caused principally by an increase in overall load factor to almost 70%. Yields increased by 5% helped by fuel surcharges, but unit costs advanced faster in spite of the contribution of lower unit labour costs discussed above.

The weighted average rate of exchange used to convert local currencies to the US dollar was little changed over the year, even though the rate depreciated from US\$1.357 at the beginning of the year to \$1.1844 at the end of the calendar year. However, during the summer months of 2004 and 2005 the rates were very similar. The same held for the rate between the € and the Japanese yen. Average fuel prices were up by 42% in calendar year 2005. Some airlines end their financial year on 31 March: for example, British Airways which experienced an increase in fuel price of 38% in US dollars for the year ending 31 March 2006.

The sixteen airlines as a whole made a pre-tax profit of US\$3.0 billion in 2004 increasing to \$4.0 billion in 2005. Net losses were recorded in 2005 by Alitalia, SAS, Swiss and TAP Air Portugal, while British Airways, Iberia and Lufthansa all made significant improvements. The amount allowed for taxation by these airlines increased from \$623m in 2004 to \$1,316m in 2005.

Long-term capital has been calculated as the total of shareholders' equity, long-term debt and capitalised finance leases (both on balance sheet), and capitalised operating leases. The latter were estimated by multiplying annual aircraft lease rentals (in the profit and loss account) by seven. Around 32% of the total capital was accounted for by operating leased aircraft in 2005 (little changed from the previous year), showing the importance of their inclusion in financial ratios.

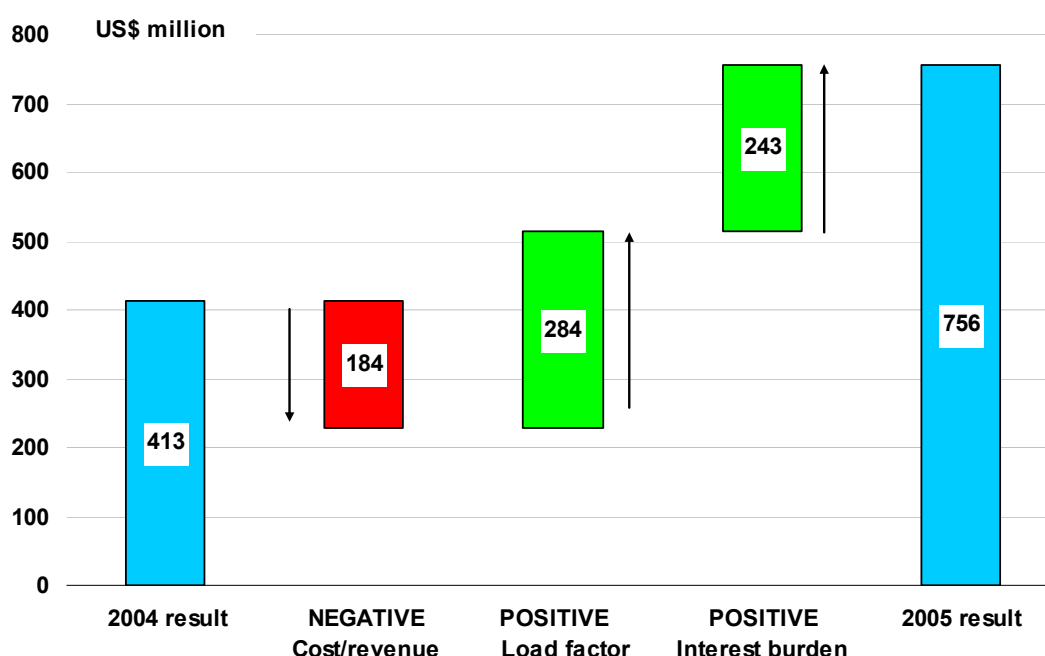
Figure 26 Operating margins for major European network airlines, 2005 vs 2004



Debt/equity ratios (including operating leased aircraft) were relatively high in 2004, but showed a marked improvement during 2005. These are normally higher for airlines compared to other industries, due to the widespread use of asset based finance. In 2004 they were still recovering from the severe financial problems following 9/11, with airlines such as British Airways focusing strongly on debt reduction. Alitalia, Iberia, and Swiss managed to reduce their debt/equity ratio by a substantial amount, as did British Airways in spite of a reduction in equity through a large provision for future pension liabilities. Lufthansa and Air France-KLM made smaller reductions in debt/equity, but for most airlines the level was still above 2:1.

Figure 27 illustrates the key factors contributing to the USD 343m improvement (+83%) in AEA airlines' aggregate 2005 result. USD243m can be attributed to improvements in the interest burden, and a further USD284m to higher average load factors, while the fall in average yields contributed a negative influence of USD184m.

Figure 27 AEA airlines: key factors influencing operating results, 2005 vs 2004



Source : AEA

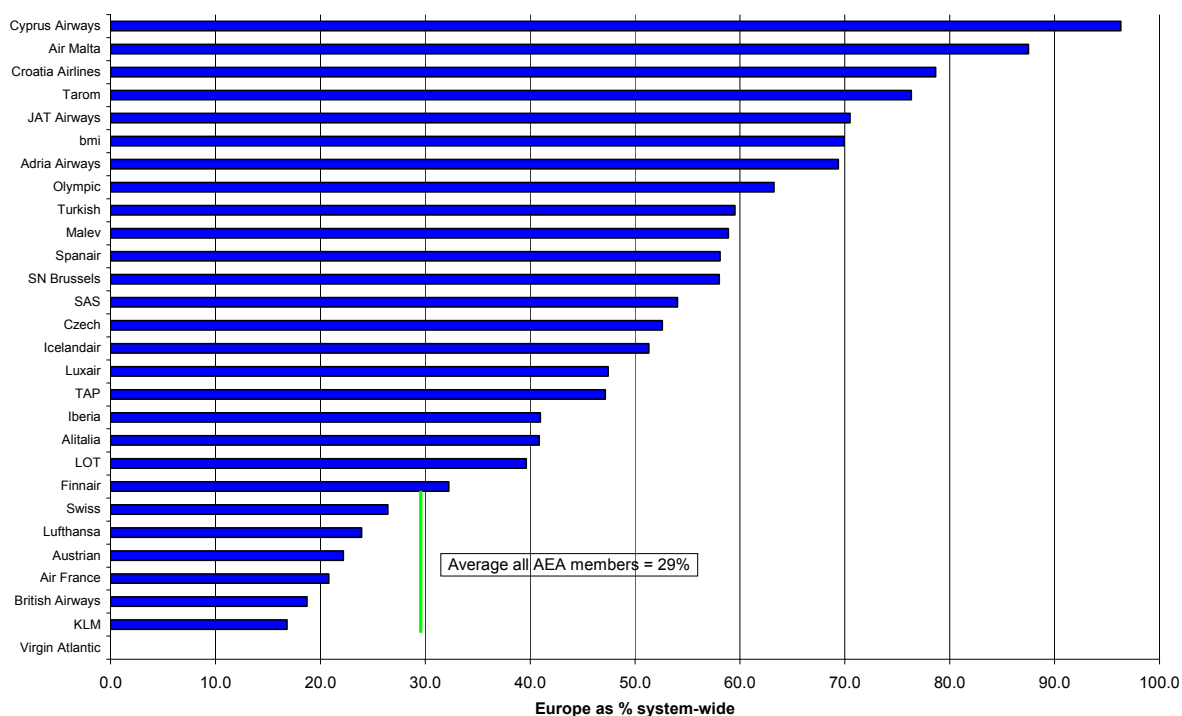
5.1.4 Key developments – network carriers

Continued high oil prices and the rapid growth of low-cost carriers in Europe created a challenging environment for European scheduled carriers in 2005. Given that the major European network airlines have a relatively low exposure to European routes as illustrated in Figure 28, they were not affected by low-cost carriers as much as their counterparts in the US.

The continued rise in fuel costs helped European airlines to focus on reducing other cost items in 2005. In May British Airways (BA) together with Air France-KLM and other European airlines reduced the commission paid to travel agents from 1% to zero, tidying up a previous anomaly. However, real progress was made by BA and others on distribution costs both through increased direct sales and e-ticketing (see

Chapter 11). BA had already outsourced flight catering at their home base to gate Gourmet, but labour problems erupted there in August 2005 and strikes forced BA to cancel 900 flights, as well as offering reduced catering on flights that were operated. In November 2005, BA announced plans to reduce its senior and middle managers by 35% from 1,715 by March 2008 thereby saving £50m.

Figure 28 Intra-European RPK as % of total operations (2005)



Source: AEA STAR 2006

Air France continued to cement its relationship with KLM, launching a common frequent flyer programme, Flying Blue in June. The two airlines also harmonised the services that they offered on economy class flights. They continued to introduce self-service kiosks, with 320 in use at around 50 airports. Their combined number of full-time equivalent staff was slightly up on 2005 compared to the previous year (+0.8%).

The number of employees in the Lufthansa passenger transport business increased by 6.7% in 2005 over 2004, or by 2,342, but this was mainly due to the consolidation of Eurowings for the first time (Eurowings employed around 1,700 in 2004). The airline continued to apply its 'Triangle' and 'Lean total direct cost' efficiency programmes. Of the cost savings identified of €170m, the carrier had achieved €115m by the end of 2005. An agreement was signed in May with their cabin crew which incorporated more efficient processes and the restructuring of the regional air transport system and the introduction of point-to-point flights also helped achieve savings.

Iberia's headcount declined by 2.1% in 2005 as a result of reductions in both flight and ground staff. Productivity advanced by 6.3%, mainly from improvements in ground staff productivity (up 6.4%), with cockpit crew and cabin crew hours per crew member up 1.5% and 3.3% respectively.

In 2005, Alitalia began to implement the four year business plan that was agreed at the time of its recapitalisation. This meant that the Airline would focus on

transporting passengers and cargo, while the related technical and handling would be transferred to Alitalia Servizi for the time being 51% controlled by Alitalia. Alitalia undertook a significant reorganisation of its procurement process, giving it savings with an impact of more than €180m a year. The airline reduced its number of employees by 13.8%, with personnel costs falling by just under 10%. This was helped by changes to daily allowances. Aircraft utilisation rose by 6.8% in 2005 versus 2004.

5.2 Low-cost carriers (LCCs) and charter airlines

The financial results of the LCCs have been combined in this section with the charter carriers. This is because of the difficulty in allocating some airlines to one of the two categories. For example, Air Berlin is generally regarded as an LCC, but the airline has just over 40% of its traffic wholesaled to tour operators.

The tables below include the following airlines:

Air Berlin, easyJet, FlyMe, Norwegian, Ryanair, SkyEurope and Transavia

This covers a large part of the LCC sector, but little of the charter industry. The latter do not provide such data in their annual reports, and few have reported 2005 to ICAO (via their governments).

Table 16 Labour costs and productivity: LCC and charter airlines

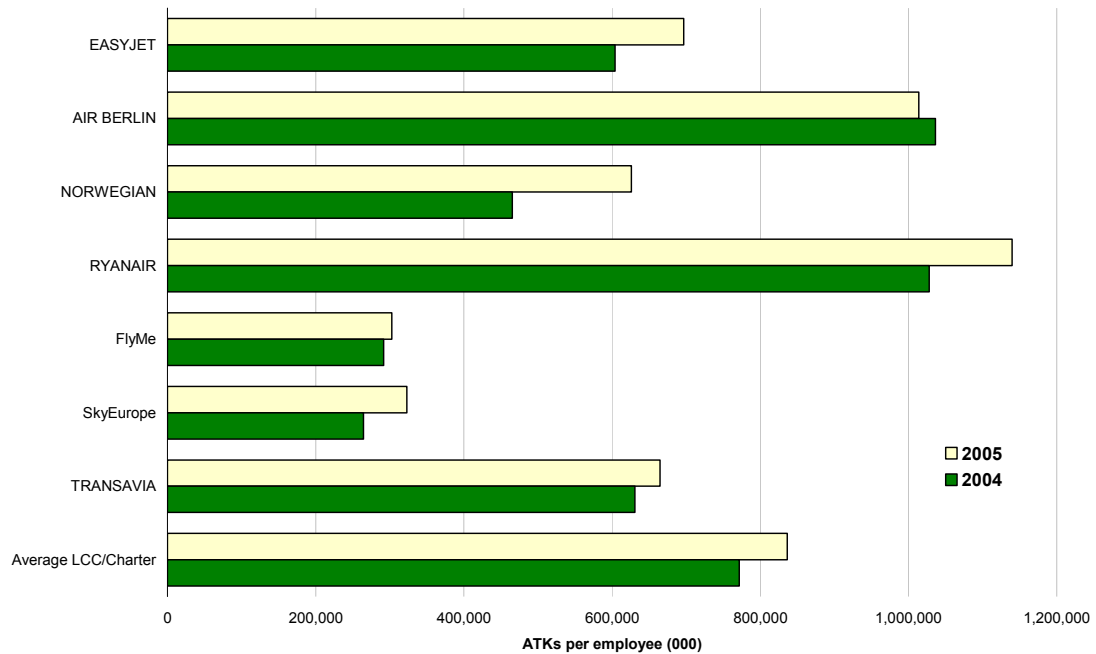
	2005	2004	%(pts) change
Total employees (year average x 000)	12,166	10,599	14.8
Total labour costs (US\$ million)	834,547	715,877	16.6
Average cost per employee (\$)	68,597	67,545	1.6
Average ATKs per employee	836,401	771,622	8.4
Unit labour costs (US cents)	8.2	8.8	-6.3

Source: ICAO and airline annual reports

These airlines expanded employment by 15%, with the average pay per employee increasing at 1.6%, well below the consumer price index. This reflects a continued strong focus on cost control. Labour productivity, which is already very high, advanced by a further 8.4% to give an improvement in unit labour costs of just over 6%. This was somewhat better than the network carriers (see previous section), and is evidence that this gap is widening overall.

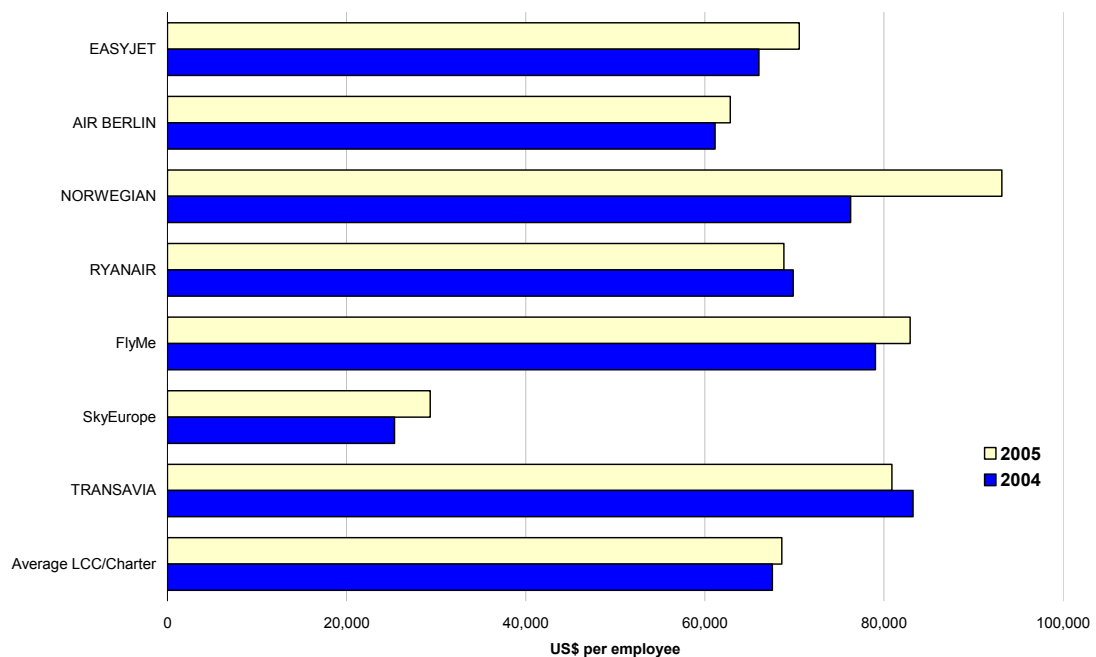
Figure 29 and Figure 30 show how labour cost and productivity changed over 2005 by individual airline, for both LCCs and charter carriers. Ryanair continued to increase productivity, as did easyJet, helped by further increases in output and the benefit of economies of scale. Norwegian also recorded a substantial improvement in 2005, helping the airline into profitability for the first year (see Figure 31).

Figure 29 ATK per employee, LCC, charter and regional airlines, 2004 v 2005



Both Flybe and SkyEurope are relatively small airlines, especially the former. They are unable to achieve the scale economies from labour the other airlines enjoy (Figure 29). SkyEurope can be seen in Figure 30 to be the only airline in this group to benefit from significantly lower wage rates and social costs.

Figure 30 Labour cost per employee, LCC, charter and regional airlines, 2004 v 2005



5.2.1 Financial result, low-cost carriers

Table 17 includes the seven LCC/charter airlines listed at the beginning of section 5.2. Some of the other important EU LCCs were omitted from the analysis: Germanwings is consolidated with Eurowings, which did publish financial results, but these were heavily influenced by contract revenues for Lufthansa. In 2004, the LCC part of Eurowings only accounted for €240m out of a total of €473m in turnover (Eurowings reported turnover of €601.2m for 2005, but with no breakdown by business). Bmibaby is also combined with parent company bmi.

The operating margin of the LCC/charter group was down slightly in 2005, but still at a healthy level compared to that achieved by the network carriers. Unit costs rose by only 3%, in spite of large fuel cost increases, and yield was down marginally. Some LCCs levy fuel surcharges, but the competitive climate led to downward pressure on prices.

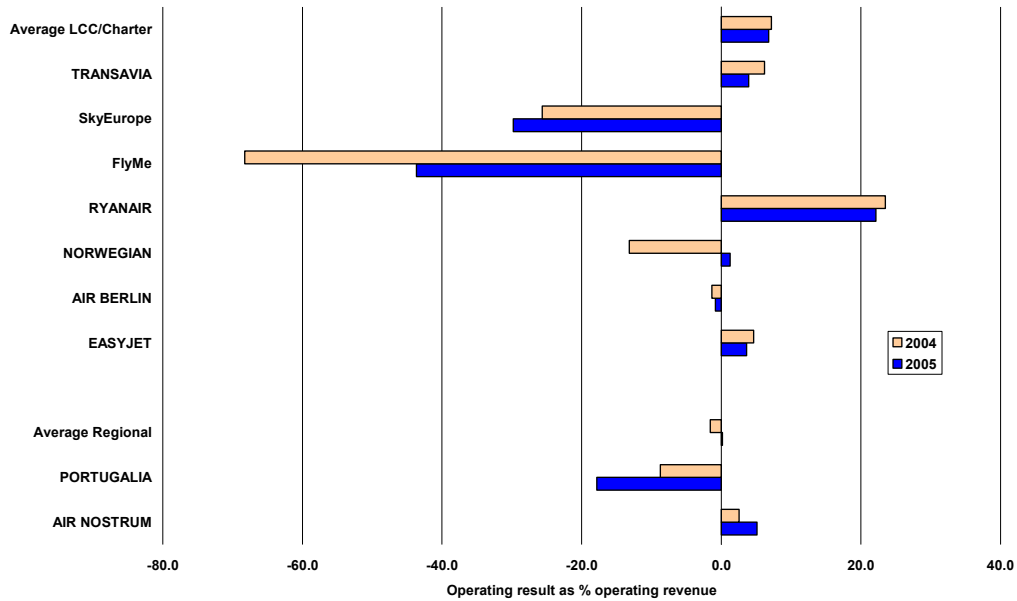
Table 17 Financial results: European LCC and charter airlines, 2004 and 2005

	2005	2004	%(pts) change
Operating margin (%)	6.8	7.2	-0.4
Total revenue per RTK (US cents)	88.5	90.5	-2.2
Operating cost per ATK (US cents)	66.7	65.0	2.6
Overall load factor (%)	80.8	77.4	3.4
Debt/equity ratio	1.4	1.2	21.5
Pre-tax profit as % long-term capital	-0.2	3.3	-3.5
After tax profit as % equity	5.8	8.2	-2.4
Operating leases as % long-term capital	31.7	27.1	4.7
Average sector length (kms)	1,117	1,098	1.7

* Aggregate of airlines reporting different financial year ends: largest part of FY falling in 2004 or 2005
 ** based on IATA data for calendar year

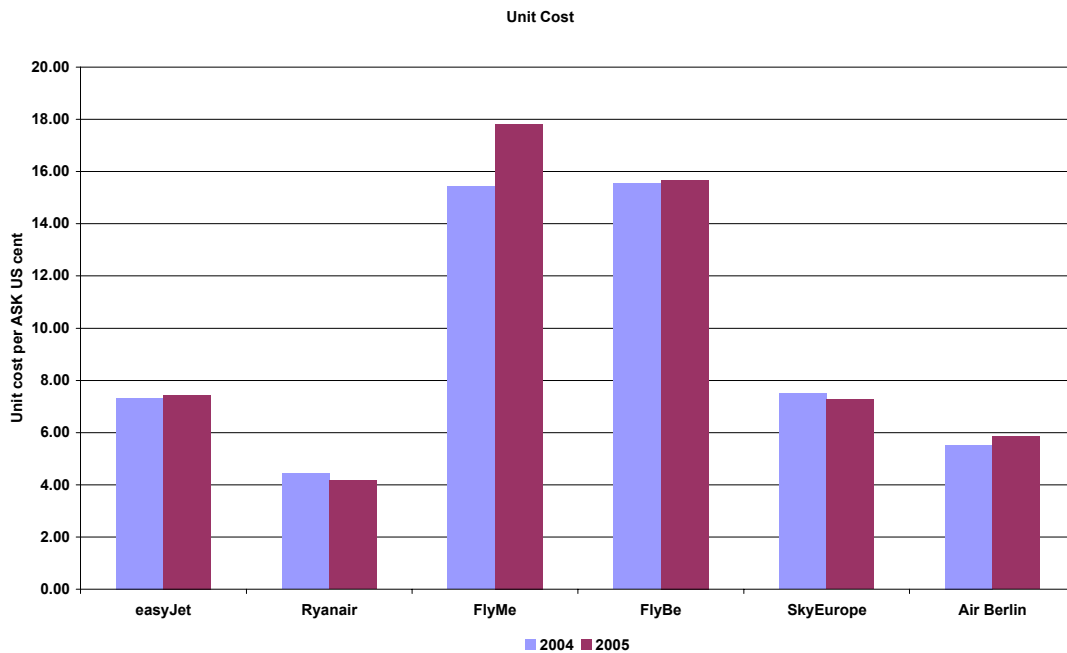
Average load factors rose by 3.4% points to just over 80%. While this helped operating profits, pre-tax losses were incurred as a result of worsening and negative results from SkyEurope, FlyMe and Air Berlin. Their average sector length was little changed, somewhat below the network carriers with their long-haul sectors included. shows the operating results for the sample included in the table, as well as the two regionals. The LCC/charter picture is one of profitability for only two out of the seven airlines, with a marginally worse position in 2005.

Figure 31 Operating results, LCC and charter airlines



Further to the overall analysis of the financial situation of the low cost carrier segment presented above, a number of financial and operational characteristics for 2004 and 2005 are considered for six low cost carriers: easyJet, Ryanair⁷, FlyMe, Flybe, SkyEurope and Air Berlin.

Figure 32 LCC unit costs, 2004 and 2005

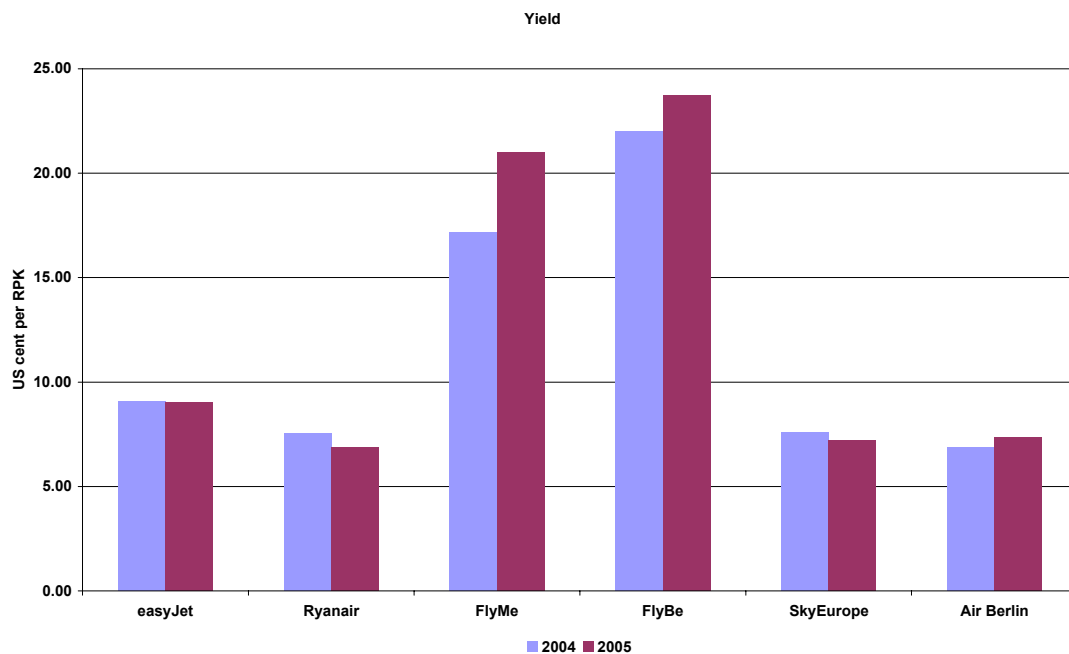


⁷ Ryanair's financial year ends on 31st March each year. In this analysis we have considered Ryanair's fiscal year that ended 31/3/2006 as being 2005 as 9 months of operation were conducted in 2005.

Considering unit costs (operating costs per ASK) it is clear that there is a wide range of cost structures in this group of carriers. Ryanair has the lowest cost (by some degree) and managed to drive down costs further in 2005 at time when fuel price rises applied significant cost pressure on all airlines. At just about 4 cents per ASK Ryanair's unit is 50% lower than its nearest cost rival, Air Berlin. Air Berlin, SkyEurope and easyJet have similar cost levels but Swedish carrier FlyMe and the UK's FlyBe have cost levels about double those of the other carriers in the group.

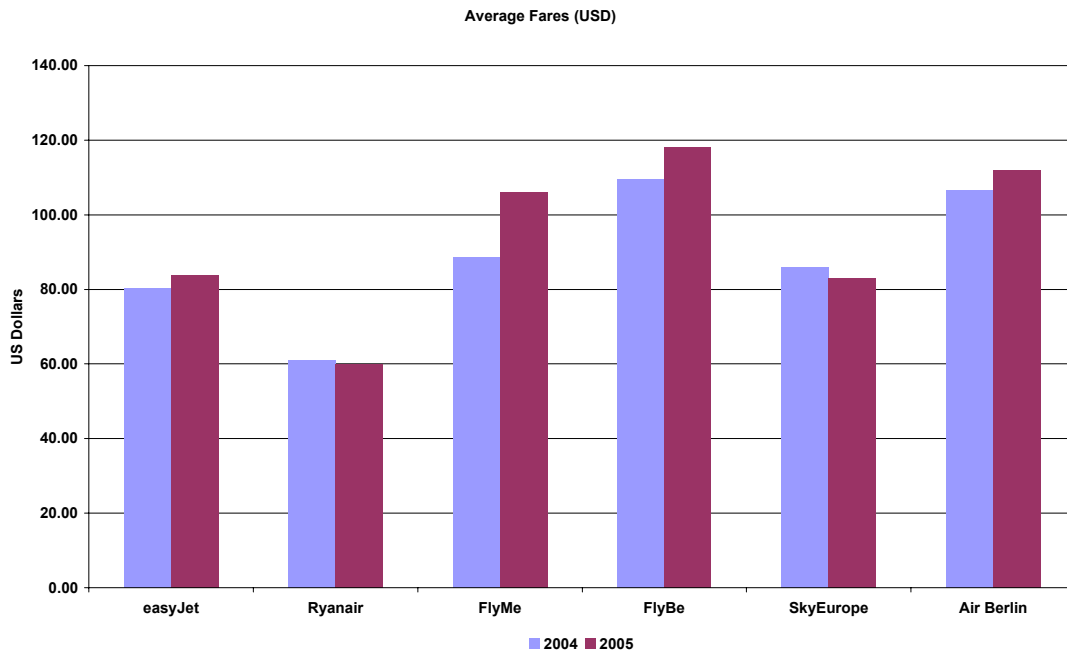
Having a higher cost structure is not problematic if an airline can attain sufficiently high yields to cover the cost structure at sufficiently high loads. While FlyMe's costs increased to nearly 18 cent per ASK in 2005, it managed to increase yields to 22 cents per RPK. With yields close to their unit cost level Sky Europe also needed to achieve a high load factor to be profitable. Ryanair's yield fell in 2005 as has been the trend for a number of years, while easyJet's remained stable. Air Berlin and FlyBe managed to achieve a small rises in yield.

Figure 33 LCC yields, 2004 and 2005



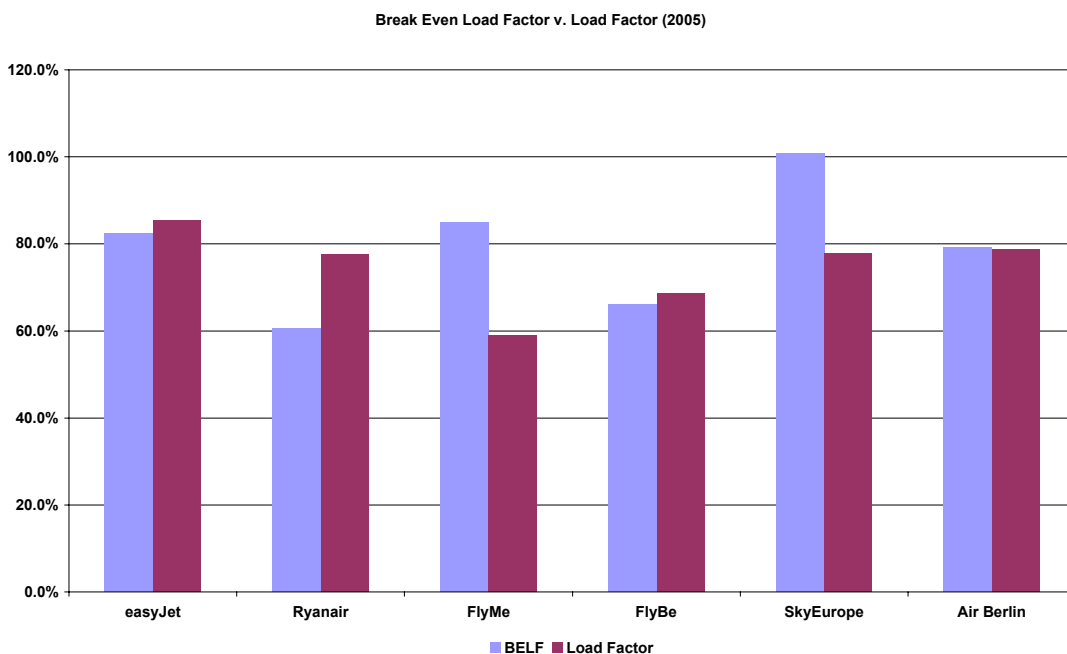
There is less obvious differences between the airlines' average fare levels. While Ryanair's average fare is nearly half that of FlyBe's, its costs are a quarter of its rival. The other airlines in the group had average fares in ranging from \$80 to \$110. This figure suggest that, while the cost structure a low cost carrier has may influence its pricing, the average fares achieved are influenced by market conditions and therefore airlines with higher cost structures will find it more difficult to make profits.

Figure 34 LCC average fares, 2004 and 2005



This argument is highlighted by Ryanair’s breakeven load factor (BELF) which at 60% is the lowest in this group of carriers. The difference between this figure and its actual load factor at nearly 80% suggest the airline made a significant profit in 2005.

Figure 35 LCC break-even load factors and load factor achieved, 2005

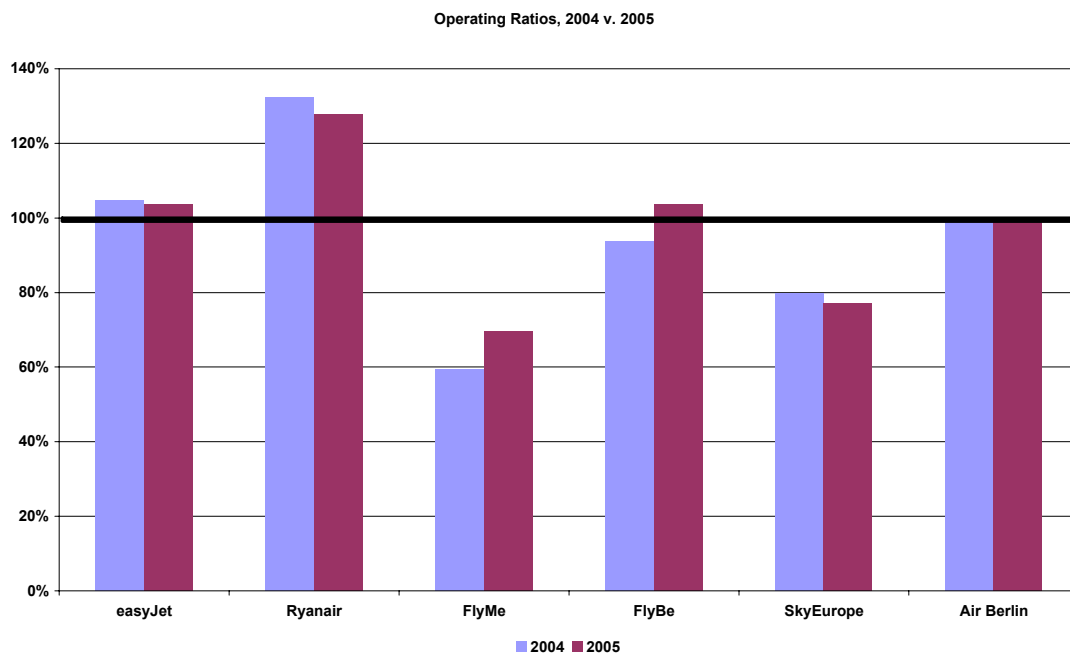


Of the others in the group, only easyJet and Flybe managed to achieve load factors in excess of their breakeven requirements. For easyJet and Air Berlin, not only are their margins very narrow, their BELFs are quite high at about 80%. It is very difficult for

a scheduled airline to achieve a load factor much higher than 80% and therefore to increase their profitability levels both airlines would need to drive down their BELF by increasing yields or reducing costs significantly.

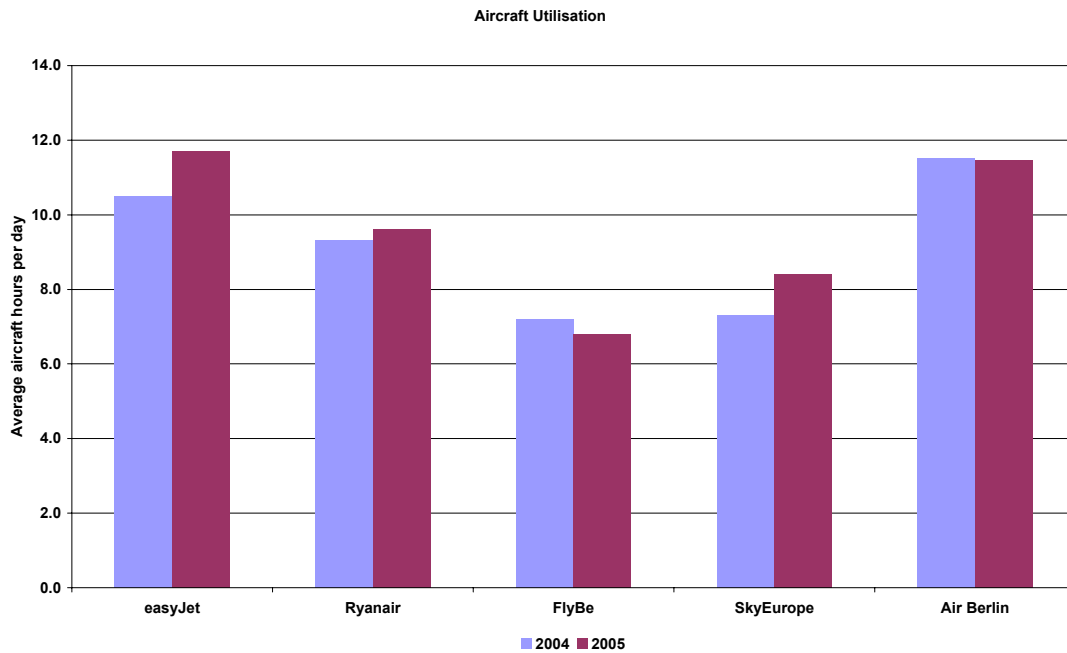
In both FlyMe and SkyEurope's case, the airlines' BELFs greatly exceed their actual load factors explaining why these carriers made significant losses, clearly shown by operating ratios of 69% and 78% respectively. While FlyBe has managed to turn a loss in 2004 into a small profit in 2005, Air Berlin has moved from a loss to nearly breakeven. Only Ryanair has achieved significant profitability with an operating ratio of 128%.

Figure 36 LCC operating ratios, 2004 and 2005



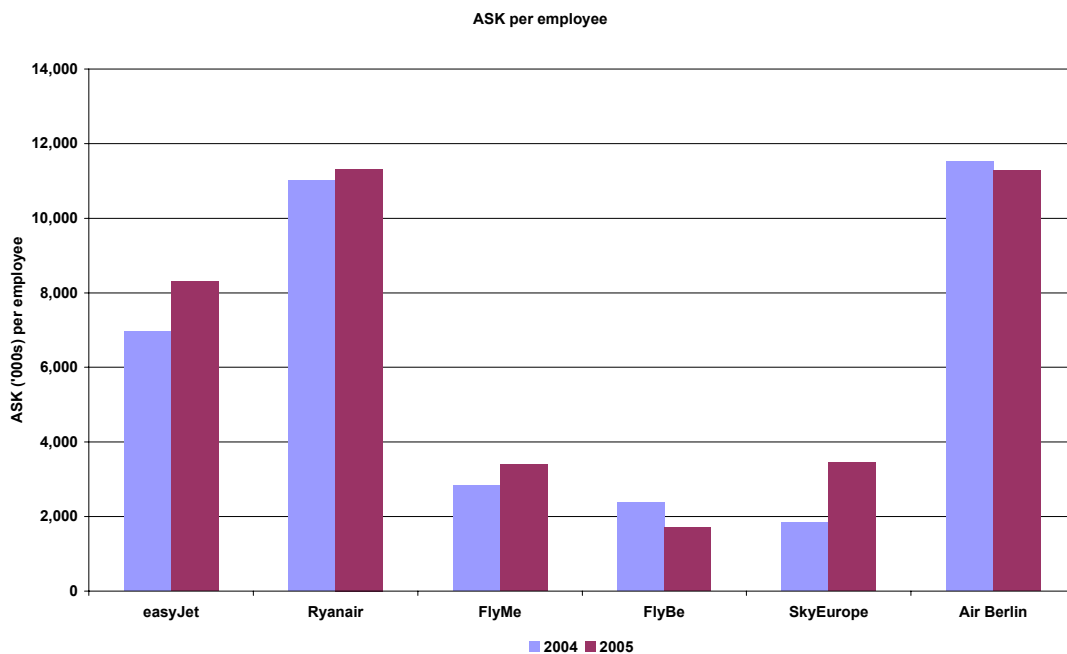
The low cost business model is partially dependent on achieving high aircraft utilisation in short haul markets. By working its aircraft assets hard, a low cost carrier can share its overhead and aircraft ownership costs over large number of hours and customers. Here we see that easyjet and Air Berlin both achieved similar high levels of utilisation. Ryanair's slightly lower utilisation is caused by flying slightly shorter sectors than easyJet, but it achieves an average 6.2 sectors operation per day for each aircraft it operates while easyJet's average is 5.8.

Figure 37 LCC aircraft utilisation, 2004 and 2005



While FlyBe’s utilisation is a function of its regional service history, SkyEurope’s cost structure could be significantly improved by better utilisation.

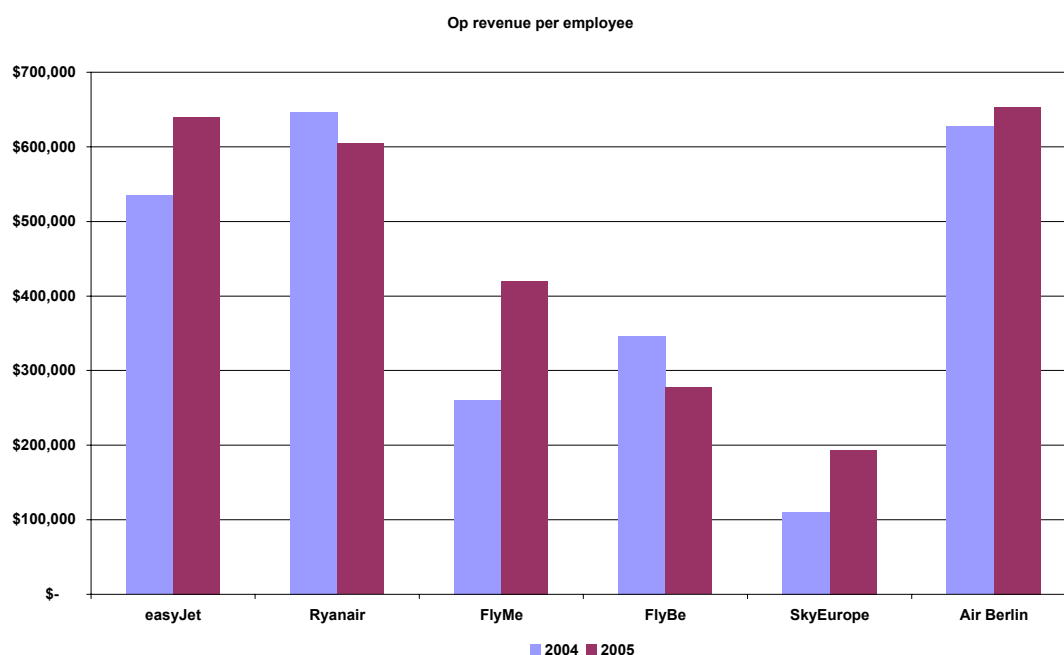
Figure 38 LCC capacity (ASK) per employee, 2004 and 2005



Looking at the productivity of the employees of a low cost carrier is somewhat problematic as the results will be influenced by the degree of outsourcing practiced by the airline and accurate figures for outsourcing are not easily available. Looking at ASK per employee we see Ryanair and Air Berlin achieving very similar high

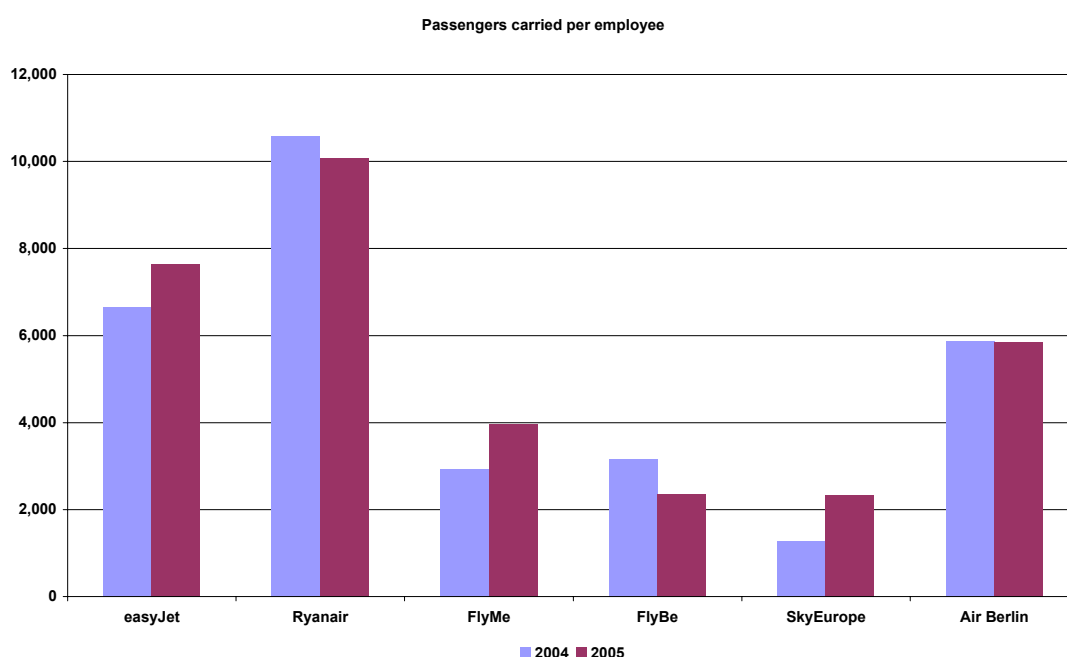
productivity from their staff. EasyJet's figure is not as high as its two main competitors, but FlyMe, FlyBe and SkyEurope have very poor productivity scores on this metric.

Figure 39 LCC operating revenue per employee, 2004 and 2005



With their higher yield figures, FlyMe and FlyBe do slightly better when operating revenue per employee is considered, but both are considerably below the levels achieved by the three leading LCCs, each achieving over \$600,000 operating revenue per employee.

Figure 40 LCC passengers per employee, 2004 and 2005



The impact of Ryanair's larger aircraft size than its main rivals, easyJet and Air Berlin is clearly seen when considering passengers carried per employee. Here easyJet's

performance is better than Air Berlin's which operate similar sized aircraft at similar sector lengths due to its 7% higher load factor. FlyBe's performance here is partially due to smaller aircraft size but SkyEurope needs to further improve its employee productivity in future years to have a viable model.

5.2.3 Major Tour Operating Groups

Table 18 lists the largest tour operators with charter airline subsidiaries in operation in 2005. There were four changes of name of the carriers owned by the TUI Group during the year. The UK's largest charter carrier, Britannia Airways, adopted the same name as the Group's UK-based low cost scheduled operator, Thomsonfly; Hapag-Lloyd changed its name to Hapagfly; HollandExel was renamed Arkefly; and TUI Airlines (Belgium) adopted the name Jetairfly. The policy reflects the trend of tour operating groups towards the adoption of common branding for the various elements of their businesses.

Table 18 Charter airline subsidiaries of Europe's largest tour operators

TUI	Thomas Cook	MyTravel	First Choice	Kuoni
Arkefly	Condor	MyTravel	First Choice	Edelweiss
Britannia Nordic	Condor Berlin	MyTravel A/S		Novair
Corsair	SunExpress			
Hapagfly	Thomas Cook (Belgium)			
Jetairfly	Thomas Cook (UK)			
Thomsonfly				

First Choice

First Choice increased its earnings by 17.2% in 2005 compared to 2004 giving the organisation an operating margin of 4.5% (Table 19). Its turnover rose by 11.3% over the same period. The organisation's strategy of reducing its dependence on short haul mainstream holiday destinations, developing a better quality long haul product, and acquiring specialist niche market tour operators appears to be proving successful. Table 20 gives details of the company's share of passengers by length of haul. First Choice Airways operated with a fleet of 30 aircraft in 2005, two fewer than in 2004.

Table 19 Financial performance of First Choice

	Earnings* (£m)	Turnover (£m)
2002	75.7	2183
2003	90.7	2249
2004	98.6	2318
2005	115.6	2579

* Profit (loss) before tax, exceptional items and goodwill.
Source: First Choice Annual Reports.

Table 20 Split of First Choice passengers by length of haul

	Short-haul (%)	Medium-haul (%)	Long-haul (%)	Total (000)
2003	44.6	49.9	5.6	2906
2004	41.0	52.8	6.2	2809
2005	36.5	56.4	7.1	2703

Source: First Choice Annual Reports.

MyTravel

MyTravel considerably improved its financial performance in 2005, transforming an operating loss of £47m into a profit £52.5m. When exceptional items and goodwill are taken into account the group's loss was £18.3m, a considerable gain on the 2004 loss of £153.4m. Overall, the tour operating group's turnover fell by 9.2% compared to 2004 (see Table 21). MyTravel reduced the fleet operated by its two in-house airlines in summer 2005 by eight to 36 compared to a year earlier. The numbers of passengers carried by the two carriers in 2005 declined by 31%. Overall, the group's turnover has fallen by one third since 2002.

Table 21 Financial performance of MyTravel

	Earnings (£m)	Turnover (£m)
2002	(11.9)	4379
2003	(411.3)	4190
2004	(47.1)	3204
2005	52.5	2910

Source: MyTravel Annual Reports.

TUI

The TUI group's Tourism division increased its earnings marginally by 2% in 2005 compared to 2004 yielding an operating margin of 2.6% (Table 22). Overall, the Tourism division's turnover rose by 5.8% over the same period, with a total of 21.6 million passengers⁸ purchasing a TUI tourism product. While earnings increased substantially in the Central Europe division (by 33%) and in the Northern Europe division (by 40%), TUI recorded a loss of €9.6m in its Western division. In 2004, its Western division generated earnings of €39.5m.

Table 22 Financial performance of TUI's tourism division

	Earnings (€m)	Turnover (€m)
2002	336	12416
2003	208	12671
2004	353	13319
2005	360	14097

Source: TUI Group Annual Reports.

Thomas Cook

The Thomas Cook Group returned to profit in 2005 after incurring losses over the previous four years. In 2005, the group generated earnings of €154.4m compared to a loss of €34.5m the previous year (Table 23). Turnover rose by 2.4% to €7661m. Its improved financial performance was due to a major restructuring involving a continued reduction in staffing (down from 24,628 in 2004 to 23,306 in 2005). The group's German carrier, Condor, produced earnings of €20.5m in 2005 in sharp contrast to the loss of €38m incurred in 2004.

⁸ This figure includes passengers flying with low cost subsidiaries, Hapag-Lloyd Express and Thomsonfly.

Table 23 Financial performance of Thomas Cook Group

	Earnings (€m)	Turnover (€m)
2002	(26.8)	8059
2003	(151.0)	7242
2004	(34.5)	7479
2005	154.4	7661

Source: Thomas Cook Group Annual Reports.

Kuoni

Kuoni's earnings decreased by 5.6% in 2005 compared to 2004 yielding an operating margin of 3.3%. Turnover rose by 3% in 2005 compared to a year earlier. Kuoni Group employees averaged 6943 during 2005.

Table 24 Financial performance of Kuoni Group

	Earnings* (CHFm)	Turnover (CHFm)
2002	120.7	3739
2003	102.4	3295
2004	127.6	3581
2005	120.4	3688

* EBITA

Source: Kuoni Group Annual Reports.

5.3 Regional airlines

Only two European regionals published separate accounts: Air Nostrum and Portugalia. Air Nostrum improved their profitability in 2005, while Portugalia's losses increased (Table 25).

Table 25 Financial results: Air Nostrum and Portugalia

	Air Nostrum			Portugalia		
	2005	2004	%(pts) change	2005	2004	%(pts) change
Operating margin (%)	5.1	6.2	1.1	-17.8	-8.7	9.1
Total revenue per RTK (US cents)	304.0	340.9	-10.8	207.6	214.1	-3.1
Operating cost per ATK (US cents)	172.1	185.6	-7.3	124.6	126.6	-1.6
Overall load factor (%)	59.7	58.0	-1.6	51.0	54.4	3.4
Debt/equity ratio	9.6	11.5	-16.5	n/a	5.2	n/a
Pre-tax profit as % long-term capital	2.6	2.4	-0.2	n/a	n/a	n/a
After tax profit as % equity	27.7	29.5	1.8	n/a	n/a	n/a
Operating leases as % long-term capital	66.0	65.7	-0.3	38.2	45.3	7.1
Average sector length (kms)	552.0	534.0	3.4	930.0	883.0	5.3

Source: ICAO financial data for calendar years

Air Nostrum yields were down 11% and Portugalia's by 3%. Competition from LCCs must have put considerable pressure on yields. Load factors are the lowest of the different airline business models, and in Portugalia's case, declined by 3.4 decimal points. Formerly, higher yields compensated for very low load factors, but the changing mix of traffic makes these more difficult to achieve. Both carriers managed to reduce unit costs, by 7% in the case of Air Nostrum, but by just 1.6% for Portugalia.

Air Nostrum made greater use of aircraft on operating lease than the other airline types. The independent Air Nostrum had a 9.6:1 debt/equity ratio in 2005, a small improvement on 2004 (with operating leases capitalised and included), with Portugalia moving to a negative ratio in 2005 and thus technical insolvency.

Table 26 includes available data on Europe's top revenue-producing regional airlines in 2005, comparing it with their performance the previous year. CCM and Malmo Aviation are the only ones recording reduced revenues. Malmo's reduced revenue carried through into an increased net loss, while Alitalia Express also worsened in terms of its net position, albeit on sharply improved revenues (up 23% over 2004).

Table 26 Top-twenty European regionals in terms of revenue (USD million) 2005

	Country	Revenues		Operating margin		Net result		Net margin		Year end
		\$ million	change	2005	2004	2005	2004	2005	2004	
Eurowings	Germany	745	27.3%	2.5%	3.1%	20.4	8.0	2.7%	1.4%	Dec-05
Air Nostrum (Iberia Regional)	Spain	691	13.5%	5.1%		28.1	25.5	4.1%	4.2%	Dec-05
Régional	France	660								Mar-06
Lufthansa CityLine	Germany	652	3.4%	11.8%	13.8%	86.3	26.1	13.3%	4.1%	Dec-05
BA Connect	UK	640	estimate							
Brit Air	France	529	9.4%	6.8%	4.8%	16.5	11.5	3.1%	2.3%	Mar-06
Aegean Airlines	Greece	417	20.5%	6.4%	3.9%	25.4	10.5	6.1%	3.0%	Dec-05
Widerøe's Flyveselskap	Norway	362	23.0%	4.1%	4.9%	10.4	11.4	2.9%	3.6%	Dec-05
Alitalia Express	Italy	305	23.0%	0.2%	2.3%	-0.8	-0.3	-0.3%	-0.1%	Dec-05
CityJet	Ireland	280	9.2%	8.8%	8.8%	19.4	19.2	6.9%	7.5%	Mar-06
Austrian Arrows	Austria	253	18.1%	9.8%	6.5%	13.6	4.5	5.4%	2.1%	Dec-05
Blue1	Finland	226	30.5%	3.5%	-7.0%	8.2	-15.1	3.6%	-8.5%	Dec-05
CCM Airlines	France	200	-0.2%		1.2%		6.7		3.2%	Mar-06
PGA Portugalia	Portugal	200	estimate							
Binter Canarias	Spain	197	10.6%	8.7%	7.7%	11.8	12.6	6.0%	7.0%	Dec-05
Malmö Aviation	Sweden	161	-8.0%	-4.5%	-6.0%	-7.0	-10.8	-4.4%	-6.0%	Dec-05
bmi Regional	UK	148	4.9%	14.6%	10.1%	9.8	2.7	6.6%	1.9%	Dec-05
Air Greenland	Greenland	144	3.7%	8.3%	12.5%	6.8	10.8	4.7%	7.7%	Dec-05
airBaltic	Latvia	143	63.8%							Dec-05
Cimber Air	Denmark	124	17.4%							Apr-06

Source: Airline Business

5.4 Cargo airline economic performance

Many of Europe's shorter dedicated air cargo services are operated by trucks rather than aircraft. As there is little data available on airport to airport truck services, this section focuses on air services

Airline Business (November 2006) reported that air cargo revenues earned by the top-100 cargo carriers in 2005 were around US\$68 billion. In this total, revenues for the all-cargo airlines were US\$30 billion in 2005, of which \$21 billion was accounted for by one carrier, FedEx. The profitability of cargo carried on passenger flights depends on the method of cost allocation, and IATA no longer publishes these estimates.

The all-cargo airlines shown in Figure 41 made a combined profit of US\$740m in 2005, or a margin on revenues of 5.4% (versus 5.2% in 2004). Their net profit was

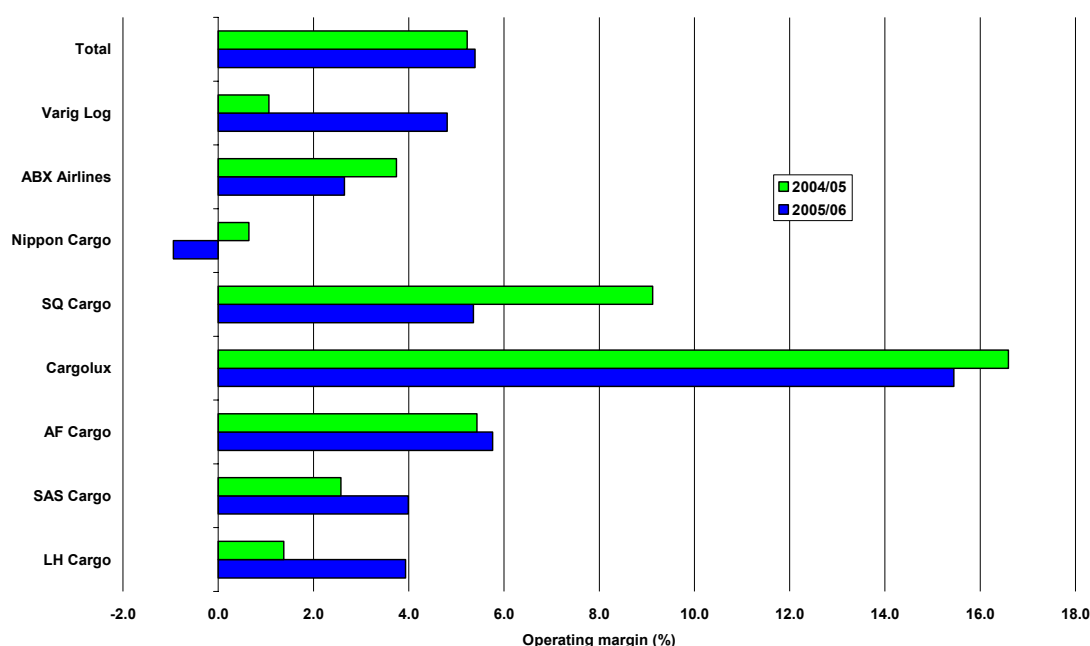
US\$222m, or 1.6% of revenues (versus 2.0% in 2004). The only European all-cargo carrier, Cargolux, made an operating profit of US\$205m in 2005, with a margin of 14.4%, and a net margin of 6.2%. The largest all-cargo carriers (in terms of total revenues) in 2005 are shown in Figure 41.

FedEx and UPS have been excluded from the above figure because they do not report the profitability of their air cargo operations, only their total operations including door-to-door products. Together they generated US\$25 billion of air cargo revenue, compared with the total revenue of the sample shown in Figure 41 of \$14 billion, although a large part of their air cargo turnover is from domestic US operations.

Lufthansa, Singapore Airlines, SAS and Varig have all formed air cargo subsidiaries, entirely separate from their air passenger operations. However, in terms of turnover, none of these approaches the size of FedEx. UPS is also significantly smaller, but has a much larger ground transport operation than FedEx.

Lufthansa's cargo subsidiary made an operating profit of €134m in 2005 (an operating margin of 3.9%) much improved from the €42m profit in 2004. SAS's cargo subsidiary made an operating profit of US\$18m in 2005 (an operating margin of 4%) compared to a profit of \$10m in 2004. However, it should be noted that the revenues and margins of these subsidiaries are entirely dependent on the rates for lower deck capacity agreed with their passenger divisions.

Figure 41 Top 10 all-cargo airlines worldwide in 2005 (and % change over 2004)



Source: ATI and airline annual reports and accounts

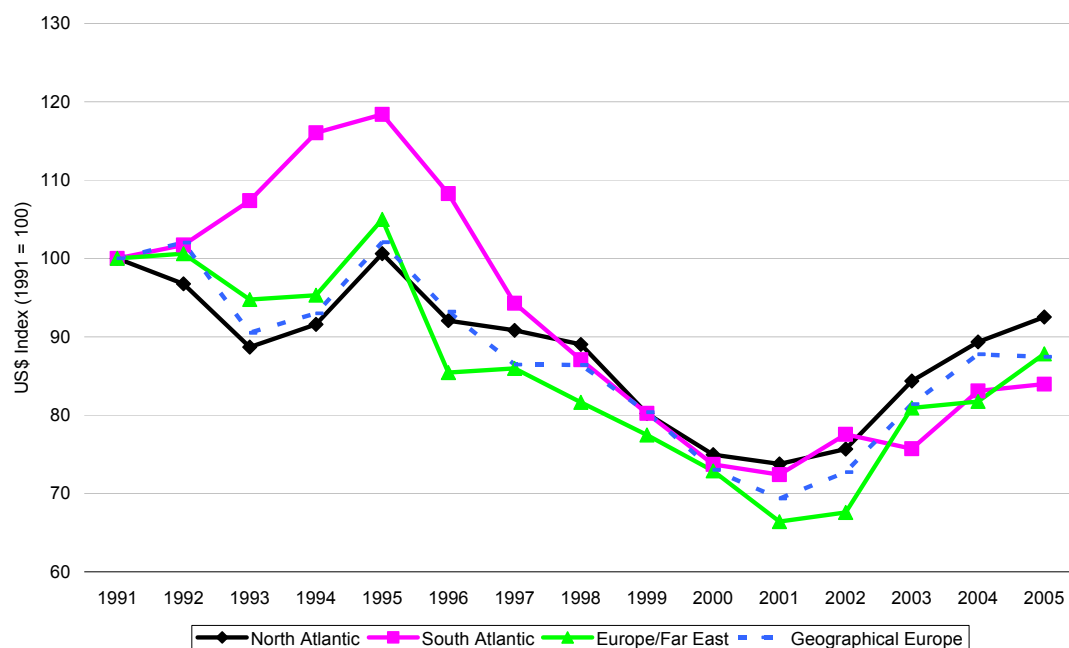
In addition to the above airlines, the largest cargo revenues generated by European passenger carriers are Air France-KLM with revenues in 2005 of US\$3,498m, followed some way behind by British Airways with \$884m, Martinair with \$874m (the airline also operates passenger charters), and Alitalia with \$587m. AF-KLM's cargo revenues only accounted for 13% of total group operating revenues, with 6% for British Airways, 63% for Martinair and 10% for Alitalia.

Figure 42 shows that AEA cargo yields have firmed since 2001, after a period of decline. These are expressed in US dollars, and the dollar weakness has been a major factor in this more recent trend. Transatlantic yields are the lowest with the North Atlantic and the South Atlantic both just over 24 US cents per tonne-km in 2005. The Far East yield was 33 cents/tonne-km and the intra-European yield 77 cents, reflecting the much shorter average sector length. There is likely to be more integrator competition on the North Atlantic, with trucks feeding hubs on both sides. Integrators tend to siphon off some of the higher yielding traffic.

If yields in 2005 are compared with 2004, the North Atlantic routes recorded 3.5% increase in current terms, the South Atlantic 1.1%, Far East 7.5% and Europe a decline of 0.4%.

Little data is released on the operating costs of carrying air cargo on both network carriers and integrators. The only major EU all-cargo carrier, Cargolux, provided a cost breakdown, reporting an increase in the share of fuel in total operating costs rising from 29.7% in 2004 to 38.1% in 2005, well above the ICAO average for 2005 of around 24%. Personnel costs were down almost 2.1% points to 13.0%, while trucking costs fell from 8.2% to 7.0%. The average cost per employee rose by 2% to US\$122,400 in 2005. In 2005, the airline spent \$101m on aircraft rentals, of which 68% (58% in 2004) was on ACMI leases, 23% being aircraft on operating leases (only 12% in 2004), and 11% block space rentals (30% in 2004). Depreciation accounted for a further \$78m of aircraft expenses in 2005 (\$89m in 2004).

Figure 42 Index of AEA airline air cargo yields by region



5.5 Other major world airlines

5.5.1 North American airlines

ATA member airlines made an overall net loss of US\$9.1 billion in 2005 compared to \$3.7 billion the year before (excluding the bankruptcy related charges provided for in their published accounts). This includes data from 139 US airlines, including Majors (20 including LCCs such as Southwest, JetBlue and AirTran), Nationals (33), Regionals (31), and Commuters (55). The operating loss in 2004 of \$1.5 billion was converted to a small profit of \$299,000 in 2005. Improved cash flow allowed long-term debt to be somewhat reduced, but accumulated losses (especially from the majors in Chapter 11) resulted in a negative stockholders' equity position.

Passenger traffic rose (by 6%) faster than capacity to give a 2.1% point increase in average load factor, with yields just a little down on the previous year. However, cost control continued to be a problem, given the rise in fuel costs that could not be passed on in surcharges (at least not in domestic markets).

Table 27 Financial results: US airlines (ATA members)

Calendar Year	2004	2005	%(pts) change
Operating margin (%)	- 1.1	+ 0.2	1.3
Passenger revenue per RPK (US cents)	7.25	7.46	2.9
Operating cost per ASK (US cents)	8.70	9.32	7.1
Passenger load factor (%)	75.5	77.6	2.1
Debt/equity ratio*	4.9	n/a	-
Average trip length (kms)	1,680	1,697	1.0

Source: Air Transport Association of America, Economic Report, 2006

* excluding capitalised operating leased aircraft

Domestic operations accounted for 74.5% of passenger traffic in 2005, but only 48.2% of cargo traffic. Although domestic cargo traffic carried by the integrated carriers such as FedEx and UPS is included, a large part of that is trucked, and thus excluded from the traffic shown here. Transatlantic services were also more important for cargo traffic (20.5% of total traffic) than passenger traffic (11.5% of total). Their passenger load factors were highest on transatlantic and transpacific routes (82%) compared to 77% on domestic flights and 73% on Latin American routes. Overall, passenger load factors have increased from 67% in 1995 to 78% in 2005.

Passenger yields in 2005 expressed in current US dollars rose by 2.1% in domestic markets compared to 2005. This was slower than the increase in the US consumer price index (+3.4%). International passenger yields advanced by 5.2% in current terms. In real terms, domestic air fares have fallen by 51.7% since the first year of deregulation (1978).

Total airline employment dropped by 2.9% over 2005 in spite of an increase in the number of cockpit crew of 2.9%. The number of mechanics was down by 10.3%.

The average compensation fell by 6.1% to \$73,055, with benefits and pension contributions down by 8.3%.

5.5.2 *Asia/Pacific airlines*

Table 28 shows financial results for seventeen member airlines of the Association of Asia Pacific Airlines for both 2004/05 and 2005/06 (year to end March). The two members that did not report were Dragonair and Air New Zealand, and JAL provided data only for its international operations. The financial year was to end of March.

Net income for the seventeen member airlines of the Association of Asia Pacific Airlines plummeted 69 per cent to \$1.1 billion for the 2005-06 financial year. Meanwhile, operating costs surged 15.9 per cent, seven points above the global average. The main money-drainer was fuel costs, which jumped 43 per cent to \$18.8bn

The results show the rebound from the year 2003/04 which was severely affected by SARS. Strong traffic growth pushed up the passenger load factor by 1.6 points (in spite of capacity being up by 10.5%) and helped the yield to increase by 7.8%. With costs up by 6.5%, helped by a rise of 38% in average fuel prices, the operating margin improved significantly by 3.5% points to a reasonably good level by international airline standards.

Table 28 Financial results: Asia/Pacific airlines (AAPA members)

	Calendar Year	2005/06	2004/05	%(pts) change
Operating margin (%)		2.2	5.8	- 3.6
Total revenue per RTK (US cents)		69.2	66.1	4.7
Operating cost per ATK (US cents)		46.1	42.6	8.3
Overall load factor (%)		68.2	68.4	- 0.2
Breakeven load factor (%)		66.7	64.4	2.3
Debt/equity ratio*		1.0	1.3	- 12.1
Average trip length (kms)		2,079	2,039	2.0

Source: Association of Asia Pacific Airlines, Annual Report, 2005/06

* based on total long-term liabilities (excluding capitalised operating leased aircraft)

Total employment by the airlines was roughly unchanged in 2005/06 at 209,300 employees, with the average pay rising by 4.1% to just over US\$52,800 and labour costs per ATK up by only 1.5%. However, fuel costs rose from 21% of total operating costs to 26% in 2005/06.

5.5.3 *South American airlines*

In Brazil, Varig faced increasing competition both domestically from TAM and Gol and internationally, and had recorded large net losses in every year since 2001. As a result it filed for bankruptcy in 2005 under new laws that gave it 240 days to reorganise. By the end of 2005, it was still operating under administration and creditors were pressing for court action. It produced an operating loss of US\$40.6m in 2005 on turnover of \$2,810m, with a large net loss of \$612m.

Also in Brazil, the LCC Gol produced an operating profit of US\$ 257m in the year to end December 2005, compared to \$197m the year before. Its net margin was maintained at a very healthy level of just over 19% of sales (\$1.1 billion in 2005).

Varig's other competitor, TAM Linhas Aereas made an operating profit of US\$177m in 2005, well up from \$101m in 2004, but its 2005 net margin was only 3.3% on sales of \$2.3 billion.

In Argentina, the major national carrier reported both operating and net profits for 2004, but did not release figures for 2005, even though some time had elapsed since the end of their financial year.

The national carrier of Chile, LAN Airlines made an operating profit of \$45m on turnover of \$750m in 2005, with a net profit of \$32m. The airline also operated subsidiary airlines in Peru and Ecuador.

5.5.4 Airlines from other regions

Russia extends from Europe to Asia and thus does not fit the categories above, neither do its airlines report to regional airline associations. However, Aeroflot is in the top fifty airlines in terms of international passenger traffic carried. In 2005, Aeroflot's turnover was US\$2,540m, up by 18% compared to 2004. Its operating profit was \$297m, with a margin on revenues of 11.7%. Its net income was \$190m giving it one of the industry's highest net margins of 7.5%. Profits both at the operating and net level were well up on 2004 levels. None of the other larger Russian airlines report profits, and do not approach Aeroflot in size (eg Transaero having only \$349m of total revenue in 2005, up by 34% over 2004).

Emirates Airlines' operating revenues were up by 27% in the financial year to end March 2006, producing an operating margin of 11.5% (down from 14.4% the previous year). Its net margin was 10.7% in 2005/06. Unit costs were up by 9.9%, and average yields by 5.2%, with a small rise in overall load factor from 65.1% in 2004/05 to 65.8% in the latest year. The average number of employees was 17,296 in 2005/06, up by 9% from the previous year, resulting in a sizeable increase in staff productivity.

The largest airline in Africa, South African Airways, reported an operating profit of R414m in 2005/06, down by 37% compared to 2004/05. The operating margin declined from 3.8% in 2004/05 to 2.2% in 2005/06 on total revenues of R19,175m (US\$3 billion). Net profit was R301m (US\$49m) for the airline, although the group made only R65m (US\$10m) as a result of the loss from a discontinued operation (the 49% stake in Air Tanzania). The airline was still technically insolvent, with negative shareholders' equity. The go-ahead was given for SAA to start its own LCC.

5.6 Aviation fuel

Average spot fuel price in 2005 was 168.1 US cents per gallon, an increase of 42.9% compared to the previous year. The range over the year also grew, widening to a high of 223.2 US cents per gallon and a low of 118.8 cents (Table 29).

The average fuel cost per gallon paid by airlines depends on market prices, individual contracts and gains or losses from hedging activities. Individual contracts tend to be similar, with some discounts for volume and variations depending on transport costs from the nearest refinery.

The share of fuel costs in total operating costs reported by the world's scheduled airlines by ICAO rose from 13.6% in 2003 to 17.2% in 2004. The share advanced again in 2005 to a preliminary estimate of 23-24%, still below the 1981 high of 29.1%.

Table 29 Average aviation fuel price trends

US cents per US gallon*				
	Average	High	Low	Standard deviation
2000	86.1	107.6	72.3	21.7
2001	71.5	81.9	50.3	16.1
2002	68.3	84.6	53.5	15.9
2003	82.7	104.9	69.6	17.8
2004	117.6	156.8	92.1	35.4
2005	168.1	223.2	118.8	43.4

* from Lufthansa cargo website: average of the principal spot markets (Rotterdam, Mediterranean, Far East Singapore, US-Gulf, and US westcoast)

Figure 43 shows the average aviation fuel price and the margin over crude oil, commonly called the crack spread. This has increased sharply since 2002, with the shortage of jet refining capacity and strong demand for the other middle distillates which are produced in much larger volumes. Some diversion to military supplies was also evident.

Figure 43 Average aviation fuel price and margin over crude oil, 1989-2005

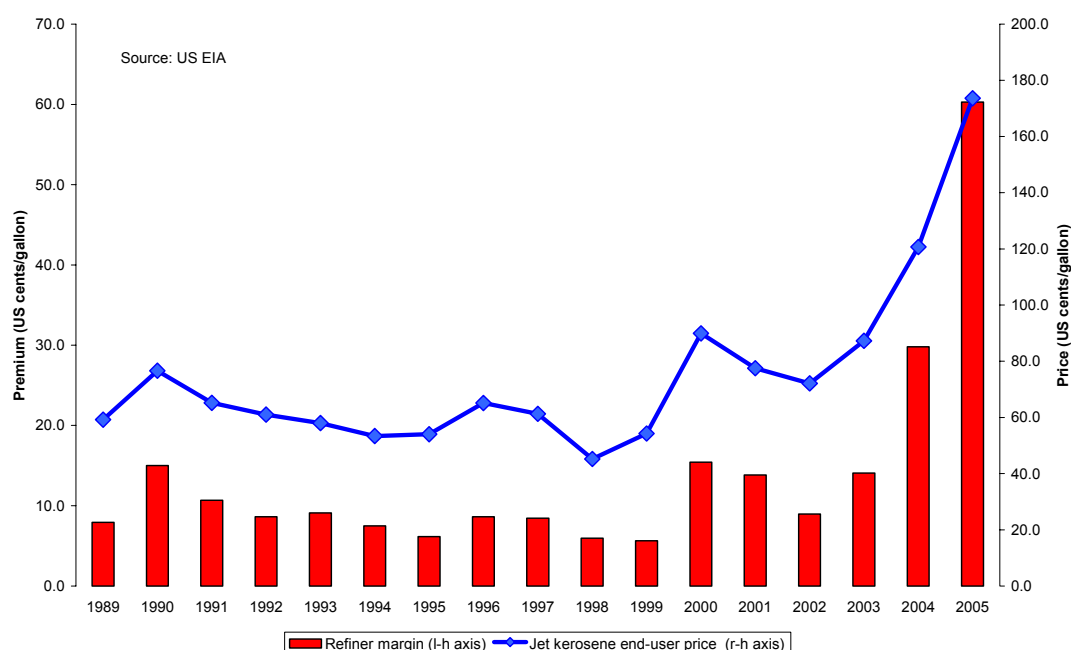


Table 30 shows the extent and type of hedging activity for the larger non-US airlines that provide the information. Of the US majors, only Southwest, Delta and Continental had any significant hedge contracts for the year 2005.

Some of the large increases in fuel costs were passed on to the consumer in the form of fuel surcharges. These are differentiated according to length of haul by many airlines.

Table 30 FY2005/06 fuel needs hedged at YE2004/05: European airlines

	% hedged	Average price (US\$/barrel)	Value \$m**	Products	Instruments
British Airways (2004/05)			418	n/a	Collars & swaps
January to March 2005	80	32.00			
April to June 2005	60	36.00			
July to September 2005	50	37.00			
October to December 05	50	37.00			
Air France (2004/05)			1,528	n/a	Options & swaps
Year 2005/06	81	n/a			
Lufthansa (2004)					Options & other
Year 2005	70	41.70*			
Iberia (2004) 1st half 05	n/a	37.50		Jet fuel	Swaps

* on only 35% of annual needs

** market value of fuel hedge derivatives outstanding at financial year end Source: Airline annual reports and websites.

The Association of European Airlines members reported fuel costs for their scheduled services to have accounted for 20% of total operating costs in 2005, up from 12% in 2003. Table 31 shows that there were increases in the fuel surcharges during 2005, first in March/April, next in June/July and finally in September.

Table 31 Fuel surcharges announced by major EU airlines in 2005 (€)

	<i>Long-haul</i>			
	BA	LH	AF	IB
January	14	17	25	15
March	23			
April		27	33	34
June	36			
July		37	37	
September	44	52	43	34
December	44	52	43	34
	<i>Short/medium-haul</i>			
	BA	LH	AF	IB
January	6	7	6	7
March	9			
April		7	8	15
June	12			
July		9	10	
September	12	12	12	15
December	12	12	12	15

Source: ABN Amro and airline press releases

Over the year as a whole they were up by between €18 and €35 per long-haul sector, and between €5-8 for a short/medium-haul sector, at least for the major EU carriers.

According to estimates from ABN Amro (Airlines & Airports, 5 October 2005), passenger fuel surcharges for British Airways will be 4.6% of total passenger revenues for the financial year ending 31 March 2006. For the same year, Air France-KLM's passenger surcharges will amount to 7.3%, and for the year ending 31 December 2005 Lufthansa's percentage will be 5.5% and Iberia's 9.3%.

Many LCCs now also levy fuel surcharges, some of them recouping total fuel costs rather than the increases incurred from a baseline. However, neither easyJet nor Ryanair do, although the surcharges imposed by their competitors allow them to adjust their prices accordingly.

5.7 European airline financing

Table 32 shows the principal financial flows for the largest EU airlines in 2005. All the network airlines were able to finance fixed asset capital investment from internal cash flows. British Airways continued to impose strict controls on capital spending, using cash to pay off loans and lower the debt/equity ratio. Both the LCCs had relatively large numbers of aircraft deliveries to finance: easyJet did this from internal funds and sale/leasebacks. Ryanair used ExIm Bank guaranteed loans for most of its deliveries, with some sale/leasebacks.

Table 32 Cash flow summary for major EU airlines, 2005/06

€ million	AF-KLM	BA	Iberia	Lufthansa	SAS	easyJet	Ryanair	TOTAL
FY ending:	31/3/06	31/3/06	31/12/05	31/12/05	31/12/05	30/0/05	31/3/06	
Cash flow from operations	2,656	1,968	134	2,381	191	247	511	8,089
Purchase of fixed assets	-2,544	-416	-36	-1,122	-178	-361	-632	-5,289
Acquisitions of subsidiaries/associates	-58	-10	-79	-488	19	0	0	-617
Disposals of subsidiaries/associates	852	1	821	368	67	0	0	1,292
Sale of fixed assets	227	13	36	158	238	202	2	876
New equity issued	0	0	0		0	3	5	8
New debt/loans	1,410	0	14	287	-265	213	550	2,209
% new fixed assets from cash flow	104	473	372	212	107	68	81	100
Exchange rate €/local currency	1.00	1.47	1.00	1.00	9.28	1.46	1.00	

Source: Airline annual reports for 2005/06

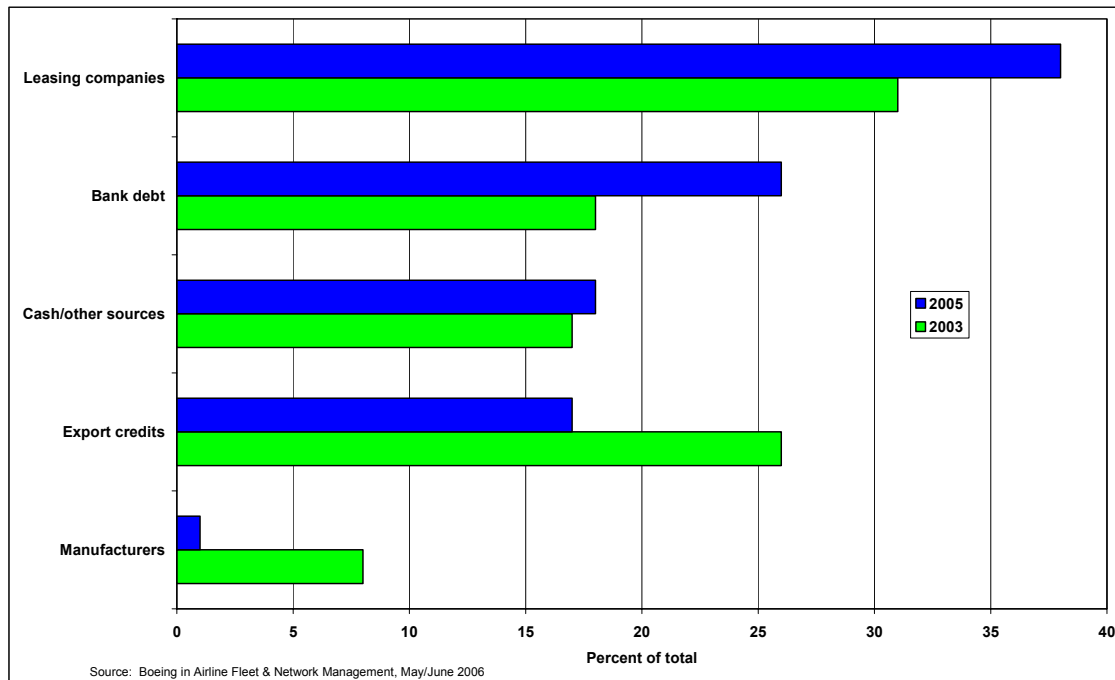
Air France-KLM has had the largest investment programme of the sample of airlines in the above table (which included taking a 23.4% stake in the consortium making the bid for Amadeus). However, these were financed entirely from cash flow, further supported by €227m from the sale of property, plant and equipment, and €817m from its sale of its stake in Amadeus in July 2005.

Lufthansa also generated cash from sale of its Amadeus shares, as did Iberia (which also took 11.68% of the company that bought out Amadeus), but both airlines had

their investments well covered by cash flow. SAS generated cash from sale and leaseback of aircraft, but had very modest purchases of fixed assets.

Between 2003 and 2005 there was a greater financing role from banks and leasing companies for the world's airlines as a whole (Figure 44). This was helped by the gradual recovery of the industry, and coupled with a small increase in cash flow and new equity sources. Direct support from manufacturers is only a last resort, and as the airlines' fortunes picked up, this source declined sharply. Export credit support was also well down in 2005.

Figure 44 Sources of aircraft financing for Boeing deliveries, 2003 and 2005



SECTION 6

AIRPORTS

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6. Airports

6.1 General traffic trends

ACI airports recorded strong, world-wide growth in 2005. Passenger throughput increased by 5.5%. Reflecting the regional growth reported in other sections of this report, Asia Pacific airports were again in the lead, showing higher than average growth comfortable ahead of increases recorded in European and North American passenger demand (Figure 45). European airports posted significant increases in traffic, somewhat ahead of North America.

Cargo traffic performance recorded the same ranking among the three regions. The corresponding increase in European cargo traffic, at 2.7%, over two percentage point higher than North America's growth, but well below the 5.8% recorded by Asia Pacific airports.

Figure 45 ACI airports by region, 2005 traffic change over 2004

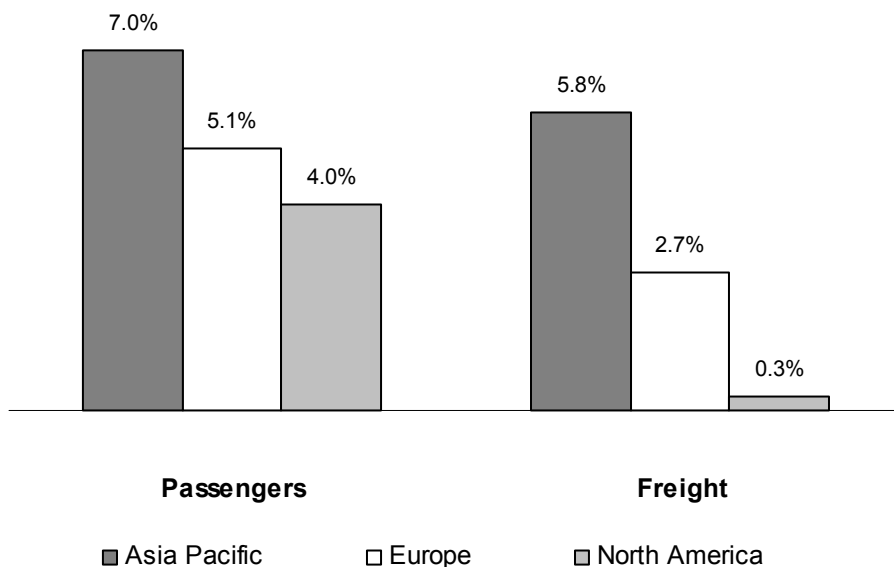
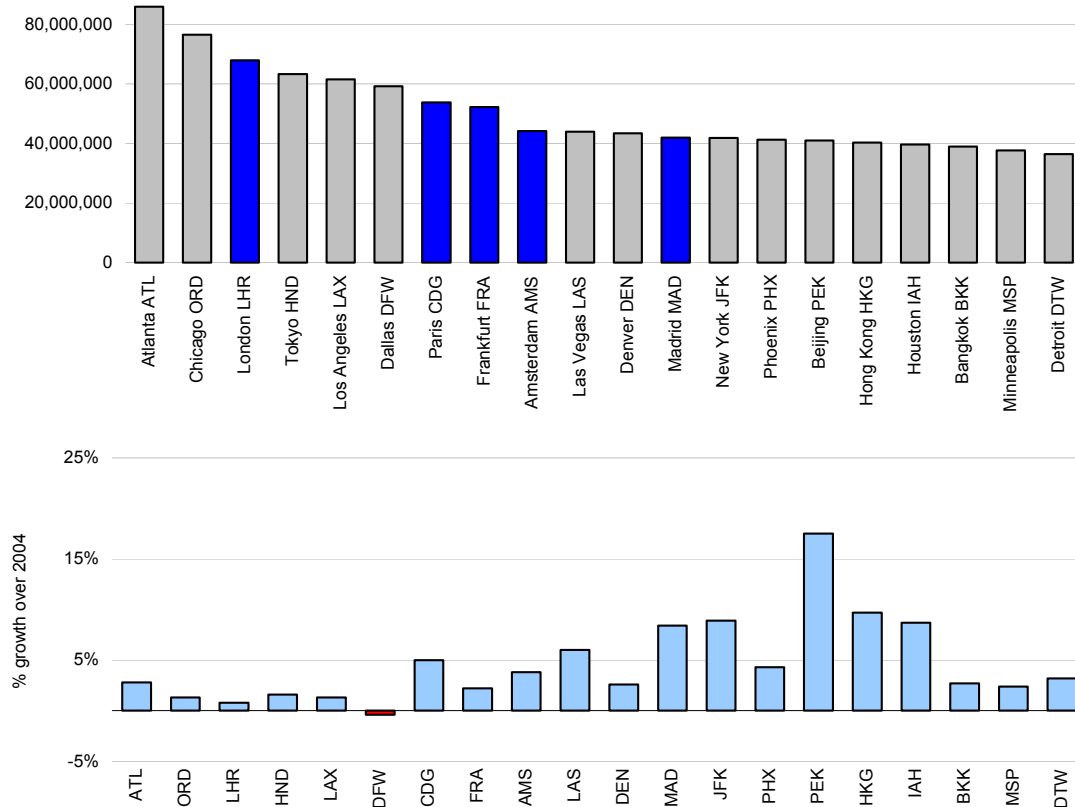


Figure 46 shows the place of European airports within the world's twenty busiest. US airports dominate the group in terms of passenger traffic. Europe's busiest airports, London Heathrow, Paris Charles de Gaulle and Frankfurt, grew in terms of annual passenger throughput by a similar rate to that achieved at some of the major US airports, although there were some striking differences.

Among the US airports, Dallas Fort Worth recorded an overall fall in passenger numbers compared to Atlanta's almost 3% growth, and on the other side of the Atlantic, London Heathrow managed to increase passenger throughput by less than one percent; Paris Charles de Gaulle achieved 5% growth and Madrid was, again, Europe's fastest growing airport in the world's top twenty, increasing its passenger traffic in 2005 by 8.4%.

However, the two fastest growing major airports in 2005 were in the Asian region. Hong Kong posted an annual growth rates just under ten percent, while Beijing reflected China's expanding economy, reaching a 17.5% increase in passengers over 2004, which itself was a massive 50% above 2003 levels.

Figure 46 European airports in the world's top twenty (by passengers), 2005

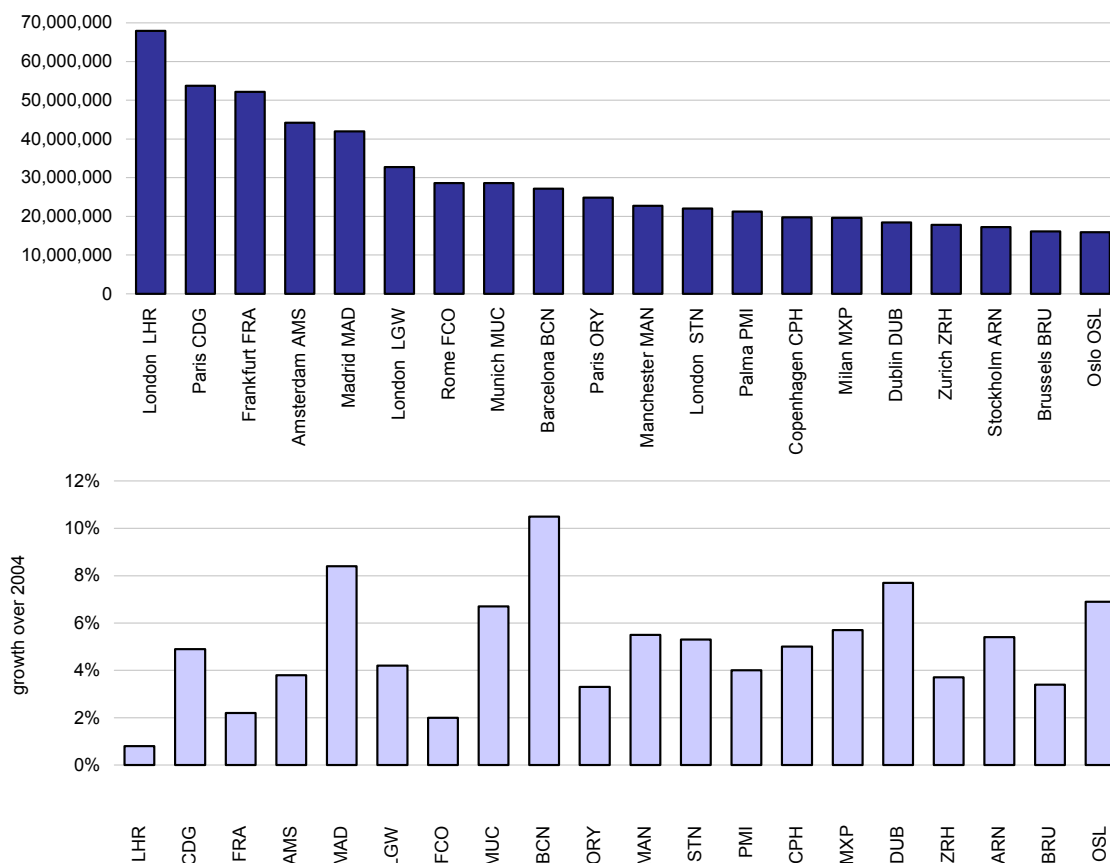


Source: ACI

6.2 Traffic growth at European airports

Average year-on-year growth of passenger traffic in 2005 at Europe's top twenty airports was 4.6%. As seen in the preceding section, this is below growth rates achieved by a number of airports in the Asia Pacific region. However, the average masks very high growth at a number of airports and quite disappointing performance in passenger terms at the continent's largest hubs. While Barcelona and Madrid both recorded annual increases in passenger traffic of over 8%, London's capacity-constrained Heathrow maintained its position as Europe's busiest airport by a comfortable margin, but managed an increase passengers numbers by half a million, representing just 0.8% traffic growth.

Figure 47 Passenger traffic at the top 20 ACI Europe airports, 2005

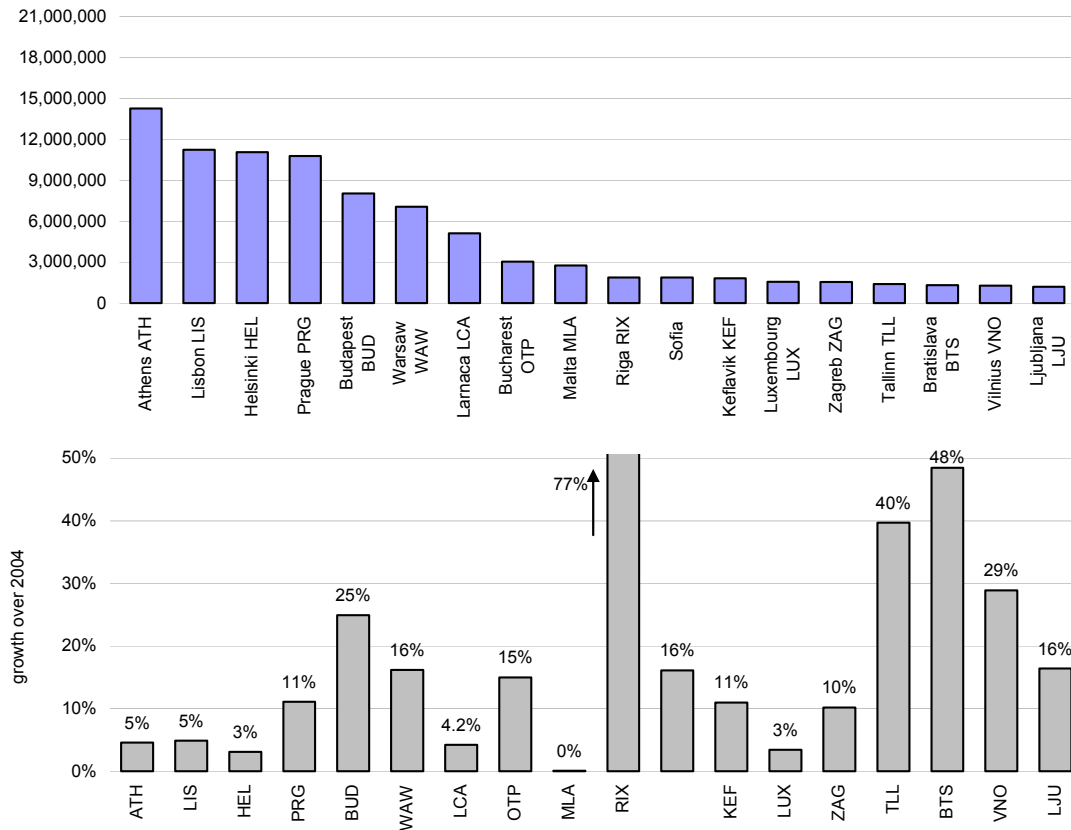


Source: ACI Europe

There were significant levels of growth in passenger traffic at many of Europe's smaller airports.

The accession states once more figured among the airports returning the highest growth statistics. At Riga traffic increased by 77% and by almost 50% at Bratislava, Vilnius grew by close to 30% and Budapest reported growth of 25%. Expansion in traffic from Bratislava and the two Baltic state airports was from a relatively low base, and quite clearly the activities of low-cost carriers were essential to fuelling, and maintaining this growth (Figure 48).

Figure 48 Passenger traffic for a selection of smaller European airports, 2005



Source: ACI Europe, ATI and airport websites

6.3 Developments in airport ownership

The top twenty airport authorities (operating revenue) in the European Economic Area are listed in Table 33. Also included are the top two airport authorities from the group of accession states. The table also lists the core airports (fully owned) associated with these entities. Some airport authorities such as Unique Zurich Airport and Flughafen Wien are responsible for managing one airport while there are several examples of airport authorities managing networks of airports such as Norway's Avinor and Spain's Aena.

Table 33 Top twenty EEA airport operators and top two from accession states, 2005

	Core airports
BAA (UK)	Heathrow, Gatwick, Stansted, Aberdeen, Edinburgh, Glasgow, South'ton
Aena (Spain)	Madrid, Barcelona and 44 other Spanish airports
Fraport (Germany)	Frankfurt Main
Aéroports de Paris (France)	Paris Charles de Gaulle, Paris Orly, Paris Le Bourget and 10 airfields
Schiphol Group (Netherlands)	Amsterdam, Rotterdam, Lelystad
Flughafen München (Germany)	Munich
Avinor (Norway)	Oslo, Bergen and 44 other Norwegian airports
Lufftärstverket (Sweden)	Stockholm Arlanda, Gothenburg & 17 other Swedish airports
Aeroporti di Roma (Italy)	Rome Fiumicino, Rome Ciampino
Manchester Airports Group (UK)	Manchester, East Midlands, Bournemouth, Humberside
Dublin Airport Auth'y (Ireland)	Dublin, Cork, Shannon
SEA Aeroporti di Milano (Italy)	Milan Linate, Milan Malpensa
Flughafen Wien (Austria)	Vienna
Unique Zurich Airport (Switz'd)	Zurich
Copenhagen Airport (Denmark)	Copenhagen Kastrup, Roskilde
Athens International (Greece)	Athens
BIAC (Brussels)	Brussels
Flughafen Düsseldorf (Germany)	Düsseldorf
ANA Portugal	Lisbon, Porto, Faro, Horta, Ponta Delgada, Santa Maria, Flores
CAA Finland (Finland)	Helsinki and 25 other Finnish Airports
Polish Airports State Ent (Poland)	Warsaw, Rzeszów, Zielona
Prague Airport* (Czech Rep)	Prague

* Formerly Czech Airports Authority

Table 34 lists the proportion of share capital held by the private sector, national government, regional government and municipal authorities in 2005. Of the 22 airports included in the list, only one is 100% privately-owned while the equity of another nine airport authorities is shared between the private and public sector interests. The remaining twelve airport operators are wholly owned by public sector interests whether it be the national government, regional authority or municipal council.

In 2005 the German Federal government sold its 18.3% stake in Fraport. By the end of the year 47.7% of shares in Fraport were held by private interests including a 5% stake held by Lufthansa. Fraport itself finally divested itself of its 30% share in the company set up to build and operate the new international passenger terminal in Manila. In the same year Fraport secured the concession to manage Cairo airport in Egypt. The UK's BAA, which withdrew from management of Oman's airports in 2004, added to its portfolio of overseas airport interests in 2005 by securing a 75% stake in Budapest Airport. Macquarie, which has equity holdings in several EU airports, purchased 11.3% of Copenhagen Airport – this stake was subsequently raised to 51% in December 2005. Macquarie also secured Aeroporti di Roma's shares in the Airports Authority of South Africa. Copenhagen airport was also active during 2005 in airport procurement activity raising its stake in Mexican airports operator

ASUR from 36% to 49% in addition to securing the tender to operate Bulgarian airports Bourgas and Varna. Also in 2005, Czech Airports Authority transferred two regional airports to local authority control leaving it with responsibility for managing only Prague.

There were no significant airport privatisations in 2005. However, during the year, the French government continued with its preparations for the part-privatisation of Aéroports de Paris while the Dutch Parliament's second chamber approved a Government bill to partially privatise the Schiphol Group.

Of the 22 airport operators included in Table 34, twelve have established overseas operations, taking advantage of increased opportunities afforded by the proliferation of airport privatisations since the mid-1990s. These overseas interests are either in the form of equity stakes, concession agreements or management contracts.

Table 34 Share ownership structure for major European airports, 2005

	Private Sector	National Government	Regional Government	Municipal
BAA	100			
Aena		100		
Fraport	41.42	6.58	31.70	20.30
Aéroports de Paris		100.00		
Schiphol Group		75.80		24.20
Flughafen München		26.00	51.00	23.00
Avinor		100		
Luffarstverket		100		
Aeroporti di Roma	96.99		1.58	1.43
Manchester Airports Group				100
Dublin Airport Authority		100		
SEA Aeroporti di Milano	0.88		14.56	84.56
Flughafen Wien	60.00		20.00	20.00
Unique Zurich Airport	47.84		46.76	5.40
Copenhagen Airport	60.80	39.20		
Athens International	45.00	55.00		
BIAC	70.00	30.00		
Flughafen Düsseldorf	50.00			50.00
ANA Portugal		100		
CAA Finland		100		
Polish Airports State Enterprise		100		
Prague Airport (Czech Rep)		100		

Source: compiled from airport annual reports and other sources

Equity stakes are usually in the form of minority shareholding in consortia that include other investors. Also fairly common is the retention of some degree of government control through minority equity stakes in partially privatised airports (e.g. Brussels) or through the establishment of long-term concession agreements with airport investors (e.g. London Luton airport).

Table 35 Interests in other airports by major European airport, 2005

	<i>North America</i>	<i>Europe</i>	<i>Middle-East / Africa</i>	<i>Asia</i>	<i>South & Central America</i>	<i>Australasia</i>
BAA	Baltimore Pittsburgh Indianapolis Boston	Naples Budapest				Australia Pac Perth Melbourne Launceston N Territories
Aena					GAPA Mexico Cartagena Calli Barranquilla	
Fraport		Hahn, Hannover Antalya			Lima	Brisbane
Aéroports de Paris		Liege		Beijing Phnom Penh Siem Reap		
Schiphol Group	JFK (IAT)	Eindhoven			Aruba	Brisbane
Flughafen München	No other airport interests					
Avinor	No other airport interests					
Luffarstverket	No other airport interests					
Aeroporti di Roma		Genova SAC				
Manchester Airports Gr	No other airport interests					
Dublin Airport Authority		Birmingham Dusseldorf Hamburg				
SEA Aeroporti di Milano		Naples Orio al Serio Rimini			Argentina Guayaquil	
Flughafen Wien		Istanbul Malta Riga Cuidad Real	Tehran			
Unique Zurich Airport				Bangalore	Porlamar Calama La Serena Puerto Mont	
Copenhagen Airport		Newcastle Bourgas Varna		Hainan	ASURMexico	
Athens International	No other airport interests					
BIAC	No other airport interests					
Flughafen Düsseldorf	No other airport interests					
ANA Portugal		ANAM		ADA		
CAA Finland	No other airport interests					
Polish Airports State Enterprise		Bydgoszcz Gdańsk Katowice Kraków Poznań Szczecin Szczytno- Szymany Wrocław				
Prague Airport	No other airport interests					

6.4 Regulation / government policy

The European Commission issued guidelines on how airports and regional governments should offer financial support to airlines starting new routes. These new guidelines are aimed at airports handling less than five million passengers per year and include limiting the aid timeframe to three years and ensuring that aid diminishes over the period and is linked to start-up costs.

The European Commission withdrew €12.8m in aid awarded to Athens International Airport after it broke regulations governing publicity and advertising. These regulations relate to the failure to install temporary billboards showing the European Commission as co-financers of a development project at the airport.

The Commission approved a regional airport financing scheme made available by the German Government. The programme limits aid to the development of infrastructure at regional airports.

The Commission supported a request by the UK Office of Fair Trading to refer the proposed acquisition of Exeter Airport by Macquarie and Ferrovial to the UK Competition Authority. The request was made on the basis that the proposed transaction could adversely affect airport competition in the South-West of England in light of the fact that both buyers hold existing equity interests in nearby Bristol Airport.

The Dutch Ministry of Finance announced that public floatation was its preferred mode of selling its 75.8% share in the Schiphol Group and that the country's second chamber had approved a bill granting the government legal power to sell a proportion of its equity stake in the company.

The French Ministry of Transport announced that it was going to proceed with the part-privatisation of Aéroports de Paris in 2006.

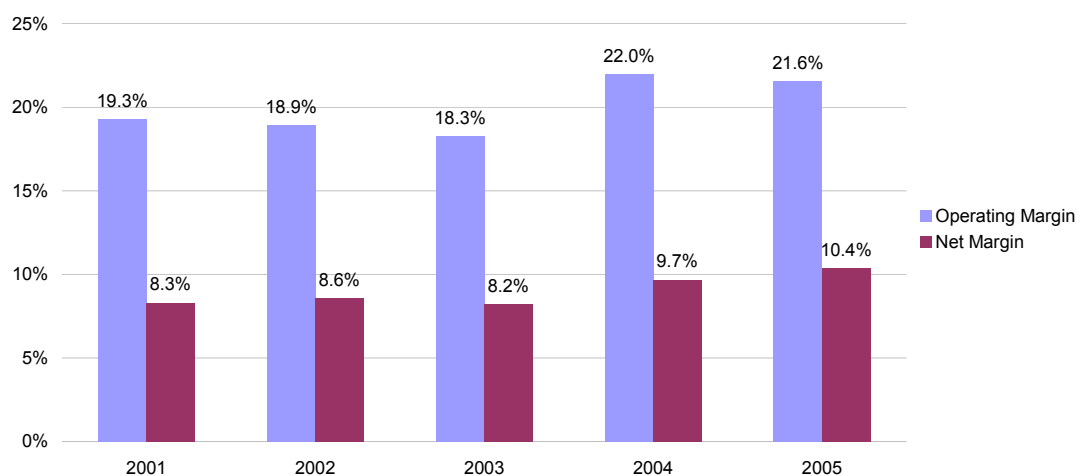
The Finnish Government announced that with effect from January 1 2006 the regulatory functions of CAA Finland would be transferred to a new civil aviation authority. The responsibility for managing Finland's airports and air traffic system would be undertaken by a new entity called Finavia. This move follows a similar decision undertaken by Sweden which from January 1 2005 had transferred responsibility for regulation from Luftfartsverket to a new Civil Aviation Authority.

The Danish Government announced plans to abolish its tax on domestic and international departures from airports within its jurisdiction.

6.5 Financial performance

Figure 49 shows the average operating and net margins for the group of EEA airport operators referred to earlier, covering the financial years 2001 to 2005.

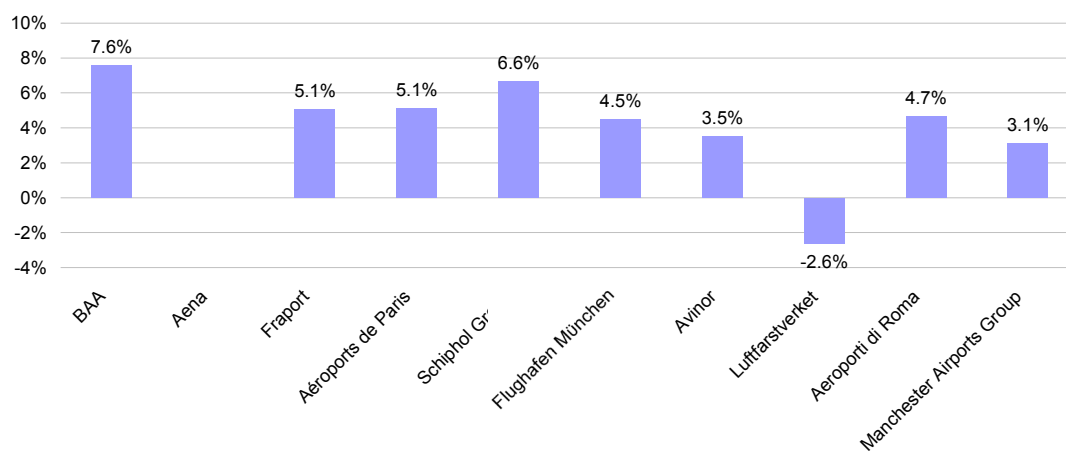
Figure 49 Aggregate results for some leading EEA airport operators 2001 -2005 ⁹



Source: compiled from airline business survey of airports and airport annual reports

Operating margin declined from 2001 to 2003 followed by a sharp improvement from 2003 to 2004, and little change to 2005. Over this period, the business environment has become much more challenging for airports. Increased security expenditure driven by tighter regulations set by European Commission and national governments have raised costs quite substantially. Some airport operators have also been affected by rising energy prices. The airline market has also become much more volatile while growth has been very modest on several domestic air travel markets. Airline traffic growth, the key variable which drives revenues, has been modest at airports dominated by network carriers. In contrast, at those airports that host low cost carrier services the traffic stimulation effects have boosted revenues, particularly from non-aeronautical sources such as retail and car parking. On the other hand, revenue growth from aeronautical charges has been less robust due to the constraining effects of government economic regulation.

Figure 50 Change in operating revenues, top ten EEA airport operators, 2005 v 2004



Source: compiled from airport annual reports

⁹ Provisional - 2005 data for Aena and Polish Airports not yet published.

In terms of operating revenue, strongest growth was reported by BAA followed by Schiphol Group. The only exception was at Sweden's Luftfartsverket where there was a fall in operating revenue – this was mainly due to the effects of transferring regulatory functions to a new Civil Aviation Authority.

Figure 51 Operating margins, EEA operators, 2004 and 2005

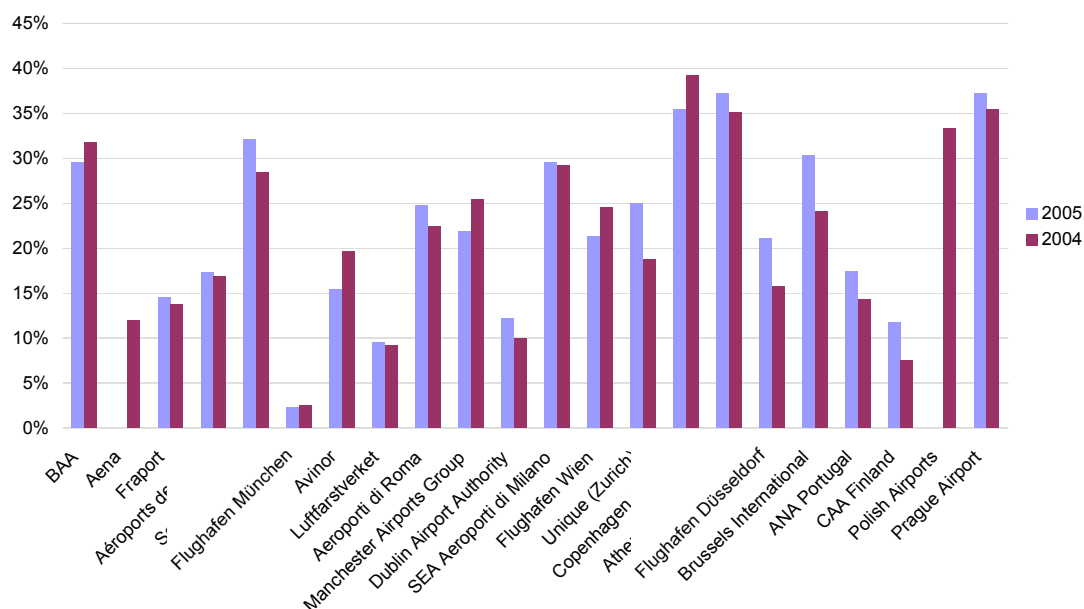
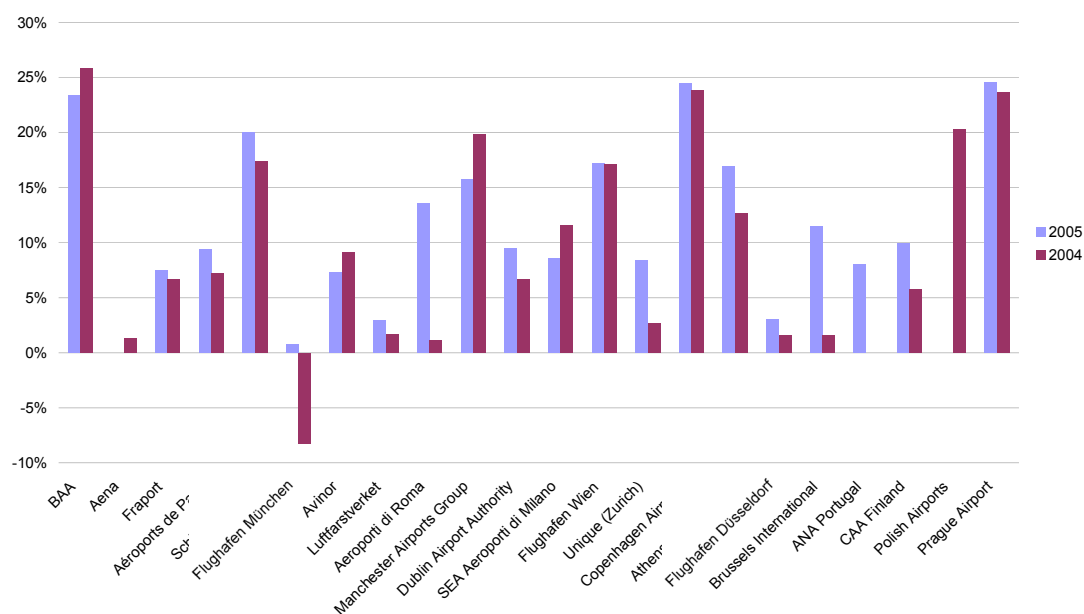


Figure 51 shows operating margin achieved by each of the group of EEA airport operators in 2004 and 2005. Some airport operators such as BAA, Avinor and Copenhagen experienced a decline in operating margin.

Figure 52 Net margin by EEA operator 2004 and 2005



The sharp fall in the latter case was largely as a result of increased staff expenditure driven by tighter security requirements. Rising security costs appear to be more than offset by strong revenue growth which has produced improved margins for several

airport operators compared to 2004. This includes, for example, Schiphol Group. The operating margin at Athens also improved but as a result of the implementation of cost reduction measures.

Incorporating the effects of interest income, expenses and taxation, fourteen operators achieved an improvement between 2004 and 2005. Munich Airport, which incurred a net loss in 2004, achieved a small positive margin in 2005. The sale of its equity stake in Airports of South Africa combined with reduced financial expenses resulted in a significant improvement in net margin for Aeroporti di Roma.

6.6 Key developments EEA top ten airport operators

6.6.1 BAA

BAA outlined plans to redevelop London Heathrow Terminal 2. Under these plans it is expected that the existing terminal would be demolished and replaced by a facility capable of handling 30 million passengers per year in time for the 2012 Olympic Games. The plans are, however, subject to planning approval. BAA also signalled that it is planning to have a second runway operational at London Stansted by around 2010-2012.

BAA completed the purchase of a management contract and equity stake in Budapest Airport. The transaction, which was worth approximately €1.8 billion, consisted of a 75% equity stake in the airport operator and a 75-year asset management contract.

BAA's operating revenue increased by 7.5% between 2004-5 and 2003-4 financial periods. During the same period, there was a modest deterioration in operating margin caused mainly by rising security and energy costs, and higher capital expenditure incurred at all three London airports. Net margin also declined from 26% to 23% over the same period.

BAA airports collectively processed 2% more passengers in 2004-5 with strong growth reported at Southampton (13%) and London Stansted airports (9%).

6.6.2 Aena

Aena and UK air traffic management operator NATS announced that they were joining forces to develop a new automated air traffic control system to manage traffic within their respective jurisdictions.

Spanish airport development company ACDL which is 10% owned by Aena completed the purchase of 93% of UK airport operator TBI.

Information regarding Aena's financial performance in 2005 was not available at the time of writing.

6.6.3 Fraport

During 2005 Fraport sold its 30% equity stake in the company that was established to build and operate the new international airport terminal at Manila (PIATCO). Fraport also secured a contract to manage Cairo.

The German Federal Government sold its 18% stake in the company while Lufthansa became owners of 5% of Fraport after securing shares on the open market.

Fraport outlined plans to enable Frankfurt Airport to cope with A380 aircraft operations. The proposals included plans to develop twelve contact gate positions. The new proposed third terminal will also provide an additional six aircraft stands capable of hosting A380 operations.

Fraport's operating revenue increased by 5.1% between 2004 and 2005. During this period there was an improvement in operating margin from 14% to 15% assisted by the implementation of various cost-cutting measures. Also reported was a slight increase in net margin from 6.1% to 6.7%.

6.6.4 Aéroports de Paris (AdP)

AdP announced that it would spend €100m on replacing the Terminal 2E roof structure at Paris Charles de Gaulle. This followed an enquiry into the partial collapse of the structure in May 2004 which resulted in four fatalities.

Standard and Poors reduced its credit rating of AdP from AAA to AA. This was as a consequence of a change in the legal status of the company from public enterprise to private law company which effectively removes the French government's guarantee on AdP's obligations. This change in the legal status of the entity is part of a series of measures aimed at preparing the company for partial privatisation in 2006.

AdP announced that it was constructing a new regional terminal facility at Paris CDG airport to cater for short-haul aircraft operations capable of handling equipment up to the size of the Fokker 100 jet.

AdP announced that it will spend €11m in building three new parking positions for A380 freighter aircraft at Paris CDG.

Overall passenger traffic handled by AdP airports (CDG and Orly) increased by 4.4% between 2004 and 2005. Operating revenue increased by just over 5% while there was a 4.6% increase in costs. Operating margin increased from 16.9% to 17.3% while there was also an improvement in net margin from 7.3% to 9.4%.

6.6.4 Schiphol Group

The second chamber of the Dutch Parliament approved a government bill to sell a portion of the state's equity stake in the Schiphol Group which operates Amsterdam Airport. In order for the bill to become law it must have the approval of the first chamber.

The new Pier H at Amsterdam Airport became operational in 2005 designed for low cost carrier operations. Easyjet, Thompsonfly, Bmibaby, Jet2 and Sky Europe became the first carriers to use the new facility.

Passenger traffic handled by Schiphol Group's core airports increased by 4% over the period 2004-2005. Rising traffic volume contributed to an increase in operating revenue of 6.7% while costs rose by 1.6%. Operating margin in 2005 was 32% compared to 28% in 2004. Net profit margin increases from 17% to 20% over the same period.

6.6.5 Flughafen München (Munich Airport)

Flughafen München announced that it was initiating the planning process for a third runway. The airport operators indicated that the existing runway system will only be

able to accommodate traffic up to 2008 and that a third runway was needed to cope with future demand.

Flughafen München opened a new freight hall in 2005 enabling the airport to increase freight handling capacity.

Munich Airport handled 6.7% more passengers in 2005 than in 2004. This explains the 4.5% increase in operating revenue achieved in 2005. However, with costs rising faster at 4.8%, operating margin declined from 2.5% to 2.3% over the same period. Net margin in contrast improved from -8.3% in 2004 to 0.8% in 2005.

6.6.6 *Avinor*

Traffic handled by Avinor's 45 airports increased by 5% between 2004 and 2005 mainly due to growth in international passengers handled at Oslo.

Operating revenue increased by 3.5% between 2004 and 2005. This was in spite of a substantial reduction in the government subsidy awarded to assist in the recovery of costs at smaller regional airports. Revenue growth was driven mainly by increases in passenger traffic. More specifically, non-aeronautical revenue increased by 15% partly assisted by the opening of the first duty-free arrival store in Norway.

Operating margin, however, fell from 19.6% to 15.5% due to higher costs as a result of increased pension provisions and the reduction in government subsidy for regional airports. Net margin declined from 9.1% to 7.3% over the same period.

6.6.7 *Luftfartsverket (LFV)*

Airports managed by Sweden's Luftfartsverket handled in total 4.6% more passengers in 2005 than in 2004. Within this figure, there were substantial differences in the performance of airports with increases reported at Stockholm Arlanda and Gothenburg. Growth at the former airport was driven mainly by expansion in the international market and growth at the latter airport mainly attributable to low cost carrier entry in the domestic market. Several smaller airports in the network, however, experienced reductions in traffic which may threaten their future viability. LFV is planning to transfer the management of four of its loss-making regional airports to local municipalities.

Construction began on a new cargo terminal at Stockholm Arlanda Airport - expected to be completed in 2006.

Both operating revenues and costs declined between 2004 and 2005 by 2.6% and 2.9% respectively. This was primarily attributed to the transfer of regulatory functions to the new civil aviation authority (Luftfartsstyrelsen). Operating margin increased from 9.2% to 9.5% while net profit increased from 1.7% to 2.9% over the same period.

6.6.8 *Aeroporti di Roma*

Total passengers handled by AdR's two airports (Fiumicino and Ciampino) increased by 7.4% between 2004 and 2005. While a decline in traffic was reported on domestic routes, most of the growth was attributable to international routes and in particular low cost carrier expansion at Ciampino. Passenger growth at Fiumicino was a modest 2%.

The 4.7% increase in operating revenue was mainly due to the substantial improvement in non-aeronautical revenues over the same period (21.5%)

Operating margin improved slightly from 21% to 22% between 2004 and 2005 while net margin increased considerably from 1.1% to 13.6% during the same period mainly due to the effects of selling the companies equity stake in Airports of South Africa.

6.6.9 Manchester Airports Group (MAG)

Passenger traffic handled by MAG airports increased by 3% between financial years 2003-4 and 2004-5. Growth at Manchester and Bournemouth more than offset traffic decline at Nottingham and Humberside. Total operating revenue increased by 3.1%. Revenue growth was particularly strong in terms of non-aeronautical activities increasing by 6.3% over the same period. There was, however, a decline in operating margin from 25% to 22% caused by higher growth in security, pensions and energy costs. Net margin also declined from 19.8% to 15.7%.

6.7 Departure delays

The European Regions Airline Association (ERA) publishes departure punctuality data relating to airlines that voluntarily report on a monthly basis to the ERA Directorate by reporting airlines. Table 36 shows the percentage of flights departing on time, and within sixty minutes of their scheduled departure time, by month.

Table 36 Departure punctuality: overall performance for ERA regional airlines

	% flights on time			% flights within 60 minutes		
	2004	2005	change	2004	2005	change
January	84	85	1	97	97	0
February	86	84	-2	98	97	-1
March	89	85	-4	98	97	-1
April	91	88	-3	99	98	-1
May	90	87	-3	99	98	-1
June	89	86	-3	99	97	-2
July	87	85	-2	99	97	-2
August	88	88	0	99	98	-1
September	88	87	-1	98	98	0
October	87	85	-2	98	97	-1
November	87	83	-4	98	96	-2
December	86	81	-5	98	96	-2
Average	88	85	-2	98	97	-1

Source: ERA, 2006

The number of on-time departures fell by 2% to 85%. This includes those flights departing within 15 minutes of their scheduled departure time. Only January 2005 recorded an improvement on the same month in 2004. In December 2005 just 81% of flights departed on time, down 5% on the same month in 2004.

The number of flights departing within 60 minutes of scheduled departure time decreased by 1% to 98%.

Table 37 shows the percentage of flights departing on time, and within sixty minutes of their scheduled departure time, by ERA member airline. In 2005 departure punctuality among ERA carriers declined slightly in comparison to 2004. Based on this data the number of on-time departures decreased by 3.4% to 85.2%. The number of departures within 60 minutes decreased by 1.2% to 97.2%.

The increased number of flights delayed for weather reasons in the last quarter of 2005 possibly contributed to this decline. Around 7% and 11% of flights departing within 60 minutes of their scheduled time were delayed for weather reasons during November and December 2005 respectively.

Table 37 Departure punctuality for ten largest ERA regional airlines

	% flights on time			% flights within 60 minutes		
	2004	2005	change	2004	2005	change
Aegean Airlines	88.0	87.7	-0.3	97.8	97.9	0.1
Air Nostrum	86.3	85.6	-0.7	97.0	96.6	-0.4
Alitalia Express	-	86.2	-	-	94.5	-
Binter Canarias	92.4	89.7	-2.7	99.1	98.5	-0.6
Brit Air	88.4	87.1	-1.3	-	97.5	-
Eurowings	87.2	83.4	-3.8	99.1	97.5	-1.6
Lufthansa CityLine	82.2	81.3	-0.9	97.1	97.4	0.3
Regional	88.6	88.8	0.2	-	98.0	-
SWISS	76.7	77.8	1.1	98.0	98.1	0.1
Wideroe	85.2	85.8	0.6	96.8	97.4	0.6
Average all ERA airlines	88.6	85.2	-3.4	98.4	97.2	-1.2

Source: ERA, 2006

A decline in delay trends was reported by Members of the Association of European Airlines (AEA) in 2005. On European services 21.5% of departures were delayed by more than fifteen minutes. In only January and August was punctuality better than in the same months of 2004. The year end saw punctuality worsen with significantly poor weather and infrastructure delays.

London Heathrow continued to be the most affected of the 27 European airports with 27.9% of departures delayed by more than fifteen minutes. It was followed by Athens, Rome, Istanbul, and Madrid. Düsseldorf was the least affected with 13.8% of flights delayed, followed by Helsinki, Brussels, Copenhagen, and Oslo.

Table 38 shows that those airlines with poor punctuality records also tend to operate from the corresponding hubs with poor records. The five airports with the poorest departure punctuality in 2005 were the hubs for: British Airways, Olympic, Alitalia, Turkish Airlines, and Iberia.

Table 38 AEA departure delay rates on intra-European services

	% flights > 15 minutes		
	2004	2005	change
Düsseldorf	13.9	13.8	-0.1
Helsinki	13.0	15.5	2.5
Brussels	13.9	15.7	1.8
Copenhagen	14.1	16.1	2.0
Oslo	12.9	16.2	3.3
Stockholm	14.4	16.7	2.3
Paris Orly	17.2	19.6	2.4
Geneva	15.9	19.6	3.7
Larnaca	15.3	19.6	4.3
Lisbon	18.0	20.1	2.1
Frankfurt	18.2	20.2	2.0
Milan Linate	16.3	20.2	3.9
Zurich	26.1	21.3	-4.8
Manchester	19.3	21.3	2.0
Munich	20.7	21.5	0.8
Milan Malpensa	18.6	23.0	4.4
Vienna	24.8	23.3	-1.5
Amsterdam	23.6	23.3	-0.3
Dublin	23.5	24.1	0.6
London Gatwick	16.9	24.2	7.3
Paris CDG	22.7	25.0	2.3
Barcelona	20.7	25.5	4.8
Madrid	23.7	25.9	2.2
Istanbul	22.6	26.2	3.6
Rome	23.5	26.7	3.2
Athens	18.1	26.9	8.8
London Heathrow	27.8	27.9	0.1
Average	19.1	21.5	2.4

Source: AEA, 2005, 2006

SECTION 7

AIR TRAFFIC CONTROL

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7 Air Traffic Control

7.1 Galileo

7.1.1 Introduction

Much of the developments on Galileo during the year revolved around the discussions on which of the two rival consortia were going to be awarded the satellite navigation concession. The decision not to award the concession was attributed to the strength of both bids (plus some political pressure) and by the end of the year the two consortia were working together as a single entity and that the concession contract was expected to be signed in 2006. Additional national stakeholders joined the Galileo programme including China, Israel, Ukraine, India and Morocco, giving the programme a truly international flavour.

7.1.2 Satellite Development

In early 2005 the European Space Agency and Galileo Industries signed a preliminary contract for the in-orbit validation (IOV) phase of the Galileo satellite navigation programme. The initial €150m contract allowed work to begin on the first four Galileo satellites. The full €950m contract for the IOV phase was expected to be finalised by the middle of the year. The IOV phase covers construction of the four satellites, their launch in 2008 and the development and operation of the initial ground infrastructure. This would be followed by a deployment phase, when 26 more satellites will be launched to complete the constellation and the full ground network will be installed.

Under a test phase contract awarded in July 2003, two different Galileo test satellites are being built, the first scheduled for launch by a Russian Soyuz booster in 2005. Digital signal generation technology and an atomic clock for Europe's Galileo global positioning system test satellites have been integrated successfully. Tested at EADS Astrium's Portsmouth, UK facility, the clock and signal generator produce the primary navigation signal with which users will find their location. The test satellites will validate Galileo technologies in orbit before the 30 satellites needed for the constellation are launched.

The two companies involved in satellite development are Astrium and Surrey Satellites Technology (SSTL); they will provide their own platforms for their respective test satellites. However, the core GPS technology is based on European Space Agency specifications and provided by a range of suppliers. Prime contractors for the antennas are Alenia and Casa; for the frequency generator unit, Nortech Datensysteme; and for the atomic clock monitoring control, Alcatel Espacio; and the atomic clocks Switzerland's Temex and EADS Astrium. Each Galileo satellite will use two atomic clocks.

7.1.3 Operating Concession Groups

The preferred bidder for the Galileo satellite navigation concession was expected to be selected on 1 March by the Galileo Joint Undertaking (GJU) organisation, which is managing the development phase of the project. Note that in February 2004 GJU

selected two teams as bidders for the concession to operate the European satellite constellation. These were iNavsat, led by Inmarsat, Thales and EADS Space; and the Eurely consortium with its leading partners Alcatel, Finmeccanica, Spanish air traffic management body Aena and Spanish satellite operator Hispasat.

The surprise decision by GJU not to announce the award of the concession on 1 March to either of the bidding consortia – iNavSat and Eurely – was attributed to be due to the strength of both bids. Negotiations then commenced for the work to be shared between the two consortia. In June 2005 the two competing consortia bidding to operate the Galileo civil satellite constellation submitted a joint bid for the concession after the management organisation opted to combine their complementary individual approaches rather than select a preferred candidate. Eurely and INavSat stated that merging their individual resources would provide greater benefits and ensure that the programme was delivered on time.

By November 2005 it was expected that the contract to operate the European Galileo satellite navigation system would now be signed by the end of the second quarter of 2006. The two bidders, iNavsat and EUrely, have become a single entity with the working name Merged Consortia. Throughout the remainder of 2005 the combined team was in talks with the Galileo Joint Undertaking (GJU), the European Union and European Space Agency organisation that is managing the development phase.

7.1.4 Financing

In August 2005 there were concerns that Europe's Galileo navigation satellite programme may be further delayed following disagreement among the major partner nations over extra funding, linked to industrial returns. At the end of 2004, the European Space Agency (ESA) revealed that the overall cost of Galileo would have to rise from €1.1 billion to €1.5 billion. Half of the €400m increase will come from the European Commission, but at a meeting of member states' delegates last month, the four major partners, France, Germany, Italy and the UK, failed to agree on how the extra money should be linked to the substantial future commercial returns from the programme.

In November 2005 the European Space Agency's industrial policy and navigation programme committees gave the go-ahead for additional financing of Galileo's first industrial phase, which will see four satellites placed into orbit to assess the system's key technologies. One of the first satellites, integrated by Alcatel Alenia Space in its Rome facility, will be launched early in 2006.

7.1.4 Stakeholders

In March China's National Remote Sensing Centre (NRSCC) awarded a contract for development of technologies under the country's agreement to invest €200m in the European Galileo satellite navigation programme. China is the first non-European Union participant in the Galileo project, in which the NRSCC is the EU-designated Chinese partner. Including the €5m entrance fee, China is investing €70m in the first phase to develop technologies and equipment for Galileo. Mandated to choose domestic research institutes and companies to undertake the work, NRSCC signed a contract with state holding company China Galileo Industries. The company is owned by China Aerospace Science & Technology, China Electronics Technology Group, China Satcom and the China Academy of Space Technology.

In May the Israeli Industry Centre for Research and Development, Matimop, joined the Galileo programme, sealing a co-operation agreement signed in 2004 between Israel and the European Union. At the beginning of June Ukraine also received approval for participation in developing the Galileo programme Galileo. Ukraine became the third non-EC country after China and Israel to formally join the Galileo programme. The agreement signed provided for joint activities with Ukraine in sectors such as industrial manufacturing, market development, certification and technology. It will also allow Ukraine to participate in Galileo by taking a stake in the Galileo Joint Undertaking which manages the project.

In June it was announced that by the end of July seven development projects will be placed with Chinese organisations for Galileo, the European satellite navigation programme. The decision was announced following a meeting earlier in the month between Galileo Joint Undertaking (GJU) organisation and the National Remote Sensing Center of China on Chinese participation in the development phase.

In September it was announced that India is to join the Galileo programme, becoming the fourth non-EU state to participate in the programme behind Ukraine, China and Israel. The agreement will ensure availability of high-quality Galileo services within India as well as co-operative efforts to establish regional satellite augmentation systems.

In November, Morocco became the latest country, and the first in Africa, to formally agree participate in the Galileo programme, becoming fifth non-European Union state to sign a co-operation pact on Galileo, joining Ukraine, China, Israel and India. At this time, nine other countries were also in discussions regarding participation.

7.2 European Single Sky

7.2.1 Introduction

Most of the developments in 2005 were linked to various aspects of planned future co-operation and consolidation of air traffic management activities. The United Kingdom and Ireland commissioned a study to examine the creation of a single block of airspace over both countries and the oceanic areas of the North Atlantic presently under their control. The CEATS saga continued to rumble along with final agreement between the countries still being awaited by the end of the year. Spain and Portugal commenced an examination into the rationalization of their ATC operations and the EC has provided funding to the Skaane project which is linked to the coupling of Danish and Swedish air traffic services. Joint ventures were set up for the development of next generation air traffic management systems, one group being NAYS and the other being Slovenia, the Czech Republic and Austria.

7.2.2 British / Irish Airspace Developments

In early 2005 UK airspace authority National Air Traffic Services (NATS) began assessing the implications of creating a functional block of airspace with its Irish counterpart this summer having appointed a consultant, Helios Technology, to carry out the study and present its conclusions at the end of May. The study would examine operational, technical, regulatory, financial and other aspects of the proposal. The study conclusion was that the UK and Irish airspace authorities could achieve airspace management flexibility, more efficient operations, and save costs by setting up a

functional block of airspace (FAB) combining the two organisations' areas of responsibility.

At present, four flight information regions (FIRs) are overseen by the two organisations: the London and Scottish FIRs cover a total of some 901,000km², while the Shannon FIR and the vast Shanwick Oceanic FIR, ten times greater than Shannon airspace, together span nearly 2.6 million km². The proposals are forecast to deliver annual efficiency savings of €7-10m and airlines are expected to save €10-30m through better routing and fewer delays.

The study suggested the FAB should cover the whole of the Shanwick Oceanic flight information region, which extends halfway across the Atlantic. The airspace would be run from three area control centres (ACC) – Shannon in Ireland, Prestwick in Scotland and Swanwick in England. A new Prestwick is being built for service entry in 2008-9 and its launch will determine the earliest date of operation for the new Anglo-Irish FAB.

7.2.3 *CEATS*

In May 2005 at a meeting in Luxembourg the ministers and other representatives from the Central European Air Traffic Services (CEATS) states signed a declaration to implement the project as soon as possible. In order to maintain momentum on the programme the ministers agreed to address stray issues, such as regulation, civil-military co-ordination, decision-making and social dialogue, through a high-level joint working group. This working group, comprising representatives from the ministers as well as pan-European air navigation agency Eurocontrol, would put before a ministerial conference a proposal to satisfy these issues. Five states have ratified the CEATS agreement and, at the meeting, ministers invited the remaining three – Slovenia, Slovakia and Croatia – to do the same.

The following month it was announced that CEATS programme had been cleared for implementation. Although transport ministers from only five of the nations have signed the resolution so far, the other three have promised their support as they proceed, and were themselves committed “to take a final position” by the end of the following year.

7.2.4 *Portugal /Spanish initiatives*

Portuguese and Spanish air navigation service providers agreed to explore the creation of a unified functional block of airspace in line with the Single European Sky initiative. Spanish air traffic service Aena and counterpart Nav Portugal will conduct a feasibility study for a “common cross-border” airspace block to be managed by the two sides. It will comprise three phases. The first would assess airspace organisation and management, civil-military co-ordination, and service delivery models. A second phase would examine institutional arrangements for joint performance-based air navigation service provision, as well as systems specification, while the third will study training requirements and working conditions. Results of the study should be presented in October 2006.

7.2.5 *Project Finance*

In May 2005 EC regulators included a Scandinavian air traffic management scheme among a group of nine projects to receive funding under the trans-European Transport

Network programme. The EC plan to allocate €2m to the Skaane project which is designed to transfer airspace control for parts of southern Sweden to Danish controllers. Danish air navigation provider Naviair and its Swedish counterpart have been working towards delegating responsibility for approach and aerodrome control around Malmo Sturup Airport to Denmark. Initial transfer of control would begin next year while a second phase would optimise airspace, traffic flows and procedures across the Oresund region, in the vicinity of Malmo and Copenhagen.

7.2.6 *DFS Business development*

German air navigation service provider (ANSP) DFS announced an early move to prepare for the business opportunities presented by the Single European Sky (SES) and compulsory licensing for European service providers. It has launched an airport air traffic control business called Tower Company, because when compulsory licensing for service providers is implemented at the end of 2006, they will be free to bid for airport ATC contracts anywhere in the continent.

The Tower Company would bid for airport ATC contracts at Germany's smaller airports because the services at the 17 international airports in Germany will continue to be provided by the DFS. No statement has been made about any such limitations on the company's ambitions outside Germany. Tower staff would be paid lower salaries than standard DFS rates, enabling the company to be more competitive on costs.

7.2.7 *Joint ventures*

National Air Traffic Services (NATS) and AENA are to become the world's first air navigation service providers to set up a joint venture company to develop a next-generation air traffic management system. The ultimate product will be a fully network-centric operating system that integrates airport ground, tower and approach air traffic control with area control centres. NATS and AENA hope the move will place them at the forefront of ATM consolidation in Europe as the European Single Sky is progressively implemented.

Three other European air navigation services providers are to harmonise the phased replacement of their air traffic management systems with a commonly-developed system, in line with the Single European Sky initiative. Slovenia, the Czech Republic and Austria have agreed to establish a European economic interest group known as One ATM System committing them to providing cost-efficient and high-quality services within the Single European Sky framework. The One ATM System scheme is a joint technical and commercial effort to harmonise the replacement of the agencies' present air traffic control systems between 2007 and 2012. This effort will focus on control for lower airspace as the three states are also members of the Central European Air Traffic Services (CEATS) programme to develop a unified upper airspace centre in Austria.

7.2.8 *SESAR*

Eurocontrol, the European organization for the safety of air navigation has signed a contract with industry covering the definition phase of SESAR, the renamed Single European Sky implementation programme formerly known as SESAME. The deal clears the way for the cross-sector SESAR consortium – directed by Air Traffic Alliance, and expanded to comprise 30 members – to begin a definition-phase study

to draw up six marker points for progress towards establishing a European air traffic management master plan. While the definition phase was formally launched at the Paris air show in June 2005, negotiations on the contract had still to be finalised.

The two-year definition effort, jointly funded by the European Commission and Eurocontrol, will last until the beginning of 2008. Of the overall €60m cost, the value of the contract to the SESAR consortium amounts to about €43m. Within four months the consortium completed an overall analysis of the current air transport framework. Within nineteen months the consortium hopes to have defined performance targets and concepts to meet these, as well as an implementation sequence for suitable strategies. Over the final five-month period the master plan will bring together recommendations from the air transport industry and draw up a firm work programme for initial implementation.

It is expected that SESAR will triple the capacity of European air traffic control infrastructure resulting in a large reduction in delays, and halve the cost of airspace management. More efficient trajectories will also cut the environmental impact from aircraft emissions, reducing them by 10% per flight. Definition of the master plan will mark the first phase of SESAR. This will be followed by a development phase running to 2013 before an industry-funded deployment phase moves into effect between 2014 and 2020. For the development phase, the Commission proposed to set up a specific management structure, a Joint Undertaking, following the example of GALILEO. The SESAR Joint Undertaking will be a legal entity, forming a partnership between public authorities (EU, Eurocontrol) and the private sector. The SESAR Joint Undertaking is expected to be created at the beginning of 2007, and will manage a budget of around €2.1 billion, evenly shared the European Community, Eurocontrol and the industry.

7.3 Delays

Eurocontrol produces delay statistics from two sources: the Central Office for Delay Analysis (CODA), which obtains data direct from airlines; and the Central Flow Management Unit (CFMU) which compares scheduled with actual slot times. CODA's annual report for 2005 reports total flights (from CFMU data) to have increased by 4% for 2005, compared to 2003, to over nine million. Domestic flights, which accounted for 37% of 2005 traffic, increased by 2% whereas international traffic increased by 5%.

The average delay per movement, for all causes of delay, was 11.3 minutes for departure traffic (up 9% on 2004) and 11 minutes for arrival traffic (an increase of 3% on 2004). Around half the departure delays in 2005 were attributed to airlines, 19% to airports and 11% to en-route flow control. These figures are identical to those for 2004. The data for 2003, 2004 and 2005 is summarized in Table 39.

Airport delays may be due to a variety of causes including security, or slot (runway) restrictions at either the origin or destination airport. En-route (Air Traffic Flow management ~ AFTM) delays can be attributed to one or more of capacity / demand mismatching, weather, equipment failures and staff shortages.

In 2005, lack of ATC capacity accounted for 38% of the total AFTM delay followed by weather with 27%, airport facilities with 17%, ATC staffing with 5% and ATC equipment with 4%. Compared with 2004, there was an increase in the airport

facilities and industrial action categories and a decrease in the ATC capacity and ATC equipment categories.

Table 39 Primary cause of departure delays, 2003 - 2005

<i>Percent</i>	2003	2004	2005
Airline	47	50	50
Airport	21	19	19
En-route	13	11	11
Weather	13	11	13
Security	4	5	4
Misc.	2	4	3
Total	100	100	100

As for individual departure airports, Rome (Fiumicino) had the highest average delay per movement in 2005 (16.4 minutes) followed by Milan Linate, Milan Malpensa, Venice Tesserà and Paris CDG. The highest average delay for destination airports was experienced at London Gatwick (15.4 minutes) followed by London Heathrow, Madrid and London Luton. The airport-pair routes with the highest average delay, in minutes per movement, were:

Milan Malpensa	London Heathrow	21.2
Rome Fiumicino	Catania	20.7
Madrid	London Heathrow	20.1
Edinburgh	London Gatwick	20.0
London Heathrow	Madrid	19.7

SECTION 8

THE ENVIRONMENT

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8. The environment

8.1 The year in brief

January 2005 began with airline groups supporting the call for aviation to be included in a European Union emissions trading scheme instead of allowing the industry to be taxed. It was thought that members of the Association of European Airlines (AEA) would eventually favour emissions trading through concern over its alternative. UK airlines were already involved in a national emissions trading scheme, with British Airways and Virgin Atlantic supporting any scheme covering the whole of the European Union (EU). The European arm of Airports Council International (ACI) announced its board backed a move to 'extend the scope of the EU emissions trading scheme to include the climate change impact of aircraft in flight'. Meanwhile the European Express Association (EEA) sought a solution from the ICAO to prevent an unfair competition with other parts of the world.

February 2005 finally welcomed the United Nations Kyoto Treaty on measures to reduce global warming into effect. While emissions from domestic aviation are included in States' reduction targets, the limitation and reduction of those from international aviation are subject to a collective agreement of developed countries working through ICAO. Proposals for an emissions tax on aviation fuel were discussed at the monthly meeting of EU finance ministers in Brussels. There were no firm policy initiatives but discussion did focus on whether such a tax could be used to increase aid to developing countries or be spent on improving the environment.

In March 2005 aviation was identified as both the single most polluting mode of transport and the fastest growing source of greenhouse gas emissions: the UK Green Party estimated that aviation accounts for just over 3.5% of carbon dioxide (CO₂) emissions. Yet a report by the Intergovernmental Panel on Climate Change suggested emissions from aircraft could be responsible for up to 15% of the overall global warming produced by human activities by 2050 at current rates of increase. They predicted that unless current aviation policy was radically changed CO₂ emissions from the industry will have increased by 588% between 1992 and 2050, and nitrogen dioxide (NO_x) pollution by 411%.

In March 2005 delegates at the Aviation and Environment Summit in Geneva were told by industry groups, including Airports Council International (ACI), the Civil Air Navigation Services Organisation (CANSO), the International Air Transport Association (IATA), and the International Civil Aviation Organisation (ICAO), that little had been achieved in educating the public and policymakers about the lengths taken by the industry to reduce noise by 70% and halve fuel consumption in the last 40 years. Assad Kotaite, president of the ICAO council, said that civil aviation is responsible for only 3.5% of global greenhouse gas emissions, yet it is portrayed as one of the largest contributors.

June 2005 saw the European Commission being presented with views from stakeholders involved in efforts to reduce the climate change impact of aviation during the environment-focused Green Week. Karl-Heinz Florenz, a German member of the European Parliament, was one to agree that emissions trading would force airlines to demand more fuel-efficient aircraft rather than buy additional credits. He

considered it the most efficient way to reduce aircraft engine emissions through lower fuel consumption.

In July 2005 the draft results of a study by consultants CE Delft for the European Commission concluded that it is technically and legally feasible to include aviation in the existing emissions trading scheme. Environmental groups meanwhile vowed to step up their efforts to persuade the governments of EU members to impose a tax on aviation fuel. Jeff Gazzard of Green Skies, the umbrella organisation for a group of European environmental interests, said: 'The supply side gains, coming from more efficient equipment, are limited to around 1-2% a year, while air transport is forecast to grow by 5% each year, so we need to find a way to reduce demand as well'.

In September the Commission published its long awaited Communication, *Reducing the climate change impact of aviation* [COM(2005)459]. It concluded that a comprehensive approach was needed including higher priority for research and development aimed at 'greening' aviation, modernisation of Air Traffic Management, continued work to remove obstacles to the taxation of aviation fuel and further effort in ICAO to improve technical design standards to limit emissions at source.

October 2005 heard Giovanni Bisignani, Director General of the International Air Transport Association, remain critical of the scheme, saying: 'Member states of the International Civil Aviation Organisation, including all EU members, are committed to deciding a course of action on aviation emissions in 2007. A European solution is no solution at all. Unilateral regional efforts will only distract from this process'. This came as environmental groups feared a decision to include airlines in the emissions trading scheme could be hindered by the International Emissions Trading Association (IETA), a heavy industry lobby, which is worried about rising carbon costs.

November 2005 observed warnings from the United States that plans to bring all carriers operating within Europe into the emissions trading scheme would face legal challenges. The Federal Aviation Administration (FAA) voiced concerns that such an extension would raise issues on the grounds that it violated the Chicago Convention ban on taxing aviation fuel or emissions. Carl Bursleson, Environment and Energy Director for the FAA said: 'The EU should be like a laboratory, with emissions trading restricted to its borders. That way it can be used as a case study for ICAO if the rest of the world later adopts a scheme'.

November 2005 also saw Eurocontrol launch a web-based training tool aimed at improving awareness of the environmental effects of aviation. It believed a widespread approach to reducing aviation pollution is necessary; including air traffic management which it thinks is one of the most significant potential sources of emissions reduction. George Paulson, Director for Safety, Airspace, Airports and Information Services at Eurocontrol, said the tool will 'give operational staff indications of the actions they can take to help reduce the impact of aviation on the environment'.

In December, Peter Gammeltoft, Head of Unit for Air Transport within DG ENV informed the Aviation Working Group (AWG) looking at the options for bringing aviation within the EU ETS : 'We would like to have as wide a scope as possible for environmental reasons. We would also like to avoid any impact on competitiveness for European carriers'. He also made clear that the entry into force of a legislative proposal would depend among other things on how quickly the legislative process was completed, which was a matter for the European Parliament and Council.

8.2 Aircraft engine emissions

The evidence supplied by British Airways to the UK Stern review on the economics of climate change in December 2005 made an analysis of air transport emissions in 2050. It used estimates of growth in aviation and fuel efficiency to suggest that air transport may not absorb the majority of the available allocation of CO₂ for the whole economy in a carbon constrained world.

Table 40 UK air transport CO₂ emissions in 2050, as a percentage of 2000 UK total emissions baseline

Fuel Efficiency Gain (per annum)	Air Travel Growth (per annum)		
	2.5%	3.0%	3.5%
1.0%	11.4%	14.6%	18.6%
1.5%	8.9%	11.3%	14.4%
2.0%	6.9%	8.8%	11.2%

Source: British Airways, December 2005

Table 40 shows that the Department for Transport estimated that in 2000 air transport generated 5.5% of total UK CO₂ emissions. By 2050 these emissions are predicted to be between 6.9% and 18.6% of the 2000 UK total depending on the rate at which air transport grows and the level of fuel efficiency achieved.

Table 41 Global air transport CO₂ emissions 2050, as % of 1992 total global emissions baseline

Fuel Efficiency Gain (per annum)	Air Travel Growth (per annum)		
	3.0%	3.5%	4.0%
1.0%	6.2%	8.2%	10.9%
1.5%	4.6%	6.1%	8.1%
2.0%	3.4%	4.6%	6.0%

Source: British Airways, December 2005

Table 41 shows that global air transport in 2050 emissions are forecast to have risen to between 3.4% and 10.9% of the 1992 global total. This again depends on the rate at which air transport grows and the level of fuel efficiency achieved.

Table 42 Air transport emissions in a carbon-constrained world, as % of total emissions in 2050, assuming 60% cut on baseline

	Low*	Mid-range*	High*
UK	17%	28%	46%
Global	9%	15%	27%

*Low=low growth, high fuel efficiency, Mid-range=medium growth, medium fuel efficiency, High=high growth, low fuel efficiency

Source: British Airways, December 2005

Table 42 shows the potential level of emissions in a carbon constrained world where CO₂ has been reduced by around 60% as recommended by leading figures in the scientific community.

The mid-range estimates show that the share of carbon emissions from air transport could rise to approximately 15% globally, within a range of 9% to 27%. Such emissions could rise to a mid-range estimate of 28%, within a range of 17% to 46%.

8.3 Emissions trading scheme

In July 2005 the Dutch consultancy, CE Delft, published its study: 'Giving Wings to Emission Trading'. The report explored the viability of including international aviation in the EU Emissions Trading Scheme. Its inclusion was in order to moderate the climatic impacts of aviation by encouraging airlines to integrate them in their business objectives. It was concluded that the introduction of emissions trading for aviation, specifically in respect of CO₂ emissions, does not appear to pose any of the challenges that have not already arisen in the context of the existing EU emissions trading scheme. The report took into account the possibility for including non-CO₂ impacts in the future. It suggests that emission trading is an option that can be considered along with other policy instruments to deal with the impact of aviation on climate change.

The Commission's September Communication, referred to in section 8.1, announced the intention, underpinned by an Impact Assessment, that examined a range of possible policy options and economic instruments, to extend the EU Emission Trading System to include aviation. This would help to internalise the environmental cost of its emissions and give the sector a clearer incentive to act to limit and reduce them. Emissions trading was considered the most cost-effective instrument compared to fuel taxation and emission charges and should involve the least cost to the industry. In addition such an approach had the best prospect of extension to other countries and regions in due course. The Communication also announced that an Aviation Working Group (AWG) comprising representatives of a wide range of stakeholders would be established to consider the modalities of bringing aviation within the EU ETS. And that the Commission would aim to table a legislative proposal by the end of 2006.

In December 2005 British Airways submitted evidence to the UK Stern review on the economics of climate change. It believed that including air transport within the existing emissions trading scheme would be the most environmentally effective and economically efficient instrument for dealing with CO₂ emissions from air transport. Initially within the EU, an emissions trading scheme should ultimately aspire to form part of an international recognised approach. The linking of CO₂ emissions in air transport with the EU scheme would be a significant step towards the global objective in spite of the largely different regional pressures on addressing climate change.

BA's evidence to the Stern Review considered it crucial for any market distortions from an emissions trading scheme to be minimised in order to gain acceptance in such a highly competitive market. To avoid a competitive imbalance and high financial burdens, emissions allowances should be distributed free of charge. It also argued that it is essential that a harmonised EU-level approach to allocation and target setting is adopted for air transport to prevent distortions in competition occurring. While emissions trading should initially apply to air services within the EU (domestic and intra-European flights) a long-term international framework should eventually be agreed through the appropriate international bodies.

8.4 EU airline emissions

In 2005 the top three EU network carriers recorded very similar fuel efficiency, with Air France-KLM edging ahead. The Advisory Council for Aeronautics Research in Europe (ACARE) targets a 50% reduction in CO₂ emissions per passenger-km. Leaving aside the fact that the comparison below uses RTKs and not passenger-kms, the past year has not contributed to moving towards this target with the combined results for these carriers down on last year. The average age of the fleets of the five carriers included in the table increased from 8.6 years to 9.2 years, with deliveries of new aircraft slow, in particular for British Airways. The average sector length over which the aircraft were operated rose by 4.5% in 2005, which should have resulted in some efficiency gains (Table 43).

Of the LCCs, Air Berlin achieved high fuel efficiency in 2005 (11.2 RTK/gallon), but operate over longer stage lengths (average 1,517 km) than Ryanair (936 km), which managed 9.0 RTK/gallon.

Table 43 Fuel consumption for major EU airlines, 2005 vs 2004

	Fuel consumption RTK/gallon*		Average sector	Average fleet
	2005	% change vs 2004	length (km)	Age (years)
Air France-KLM	10.2	1.2	1,463	9.1
British Airways	9.5	-0.5	1,791	9.5
Lufthansa	10.1	-1.5	1,247	9.4
Iberia	6.9	4.3	1,275	7.9
SAS	8.8	n/a	793	9.9

* Not comparable with data in previous annual report

Source: Airline annual and environmental reports

Table 44 shows a comparison of CO₂ and NO_x emissions for the aircraft of five major EU airlines in both 2004 and 2005. An average increase of around 6% and 5% was recorded for CO₂ and NO_x emissions respectively from 2003 to 2004, and now records around 5% and 7% respectively from 2004 to 2005.

Table 44 Change in pollutants emitted for major EU airlines, 2004 v 2005

	Aircraft CO ₂ emissions (million tonnes)			Aircraft NO _x emissions (000 tonnes)		
	2004	2005	% change	2004	2005	% change
Air France-KLM	25.3	26.4	4.1%	123.5	131.9	6.4%
British Airways	15.8	16.1	1.9%	n/a	n/a	n/a
Lufthansa	20.6	21.3	3.3%	96.0	97.3	1.3%
SAS	3.7	4.2	11.7%	14.1	16.2	13.0%
Total/Average	16.4	17.0	5.2%	77.9	81.8	6.9%

Source: Airline annual and environmental reports

As in 2004, British Airways again reported the slowest increase in emissions in 2005 perhaps due to a slower expansion in comparison to the other airlines. In 2005 its

global emissions of CO₂ from all mainline flights was 16.1 million tonnes, which represented 3% of all CO₂ emissions.

The 2005 Corporate Responsibility Report published by British Airways recognises that concentrations of ground and low level emissions of nitrogen oxides (NO_x) is a cause of concern for local communities and airport employees. It reports that Heathrow, Gatwick, and New York JFK are the airports most affected by its NO_x emissions, accounting for nearly half of its overall total. The percentage of British Airways global landing and take-off NO_x emissions in 2005 was 40.5% at Heathrow (up 1% on the previous year), 6.5% at Gatwick, and 2.6% at New York JFK. The airline seeks to optimise its procedures to reduce these emissions by applying the maximum take-off thrust reductions.

SECTION 9

CONSUMER ISSUES

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9 Consumer Issues

9.1 Introduction

The latest evidence continues to indicate that leisure travel within Europe is growing faster than business travel. Table 45, derived from UK CAA passenger survey data, compares international scheduled traffic flows from five major UK airports to a number of European countries in 2003 and 2005. Overall across these thirteen countries traffic grew by just over 5% per annum. However, leisure traffic grew by 6.4% per annum and business traffic by 2.5%. This meant that the share of leisure traffic on these country-pairs increased from 69.4% in 2003 to 70.9% in 2005.

Despite the overall share of leisure traffic gaining 1.5 percentage points, out of the thirteen countries analysed eight showed market share gains for business traffic. Traffic from the UK to Austria, Belgium, Denmark, Ireland, Netherlands, Portugal, Sweden and Switzerland showed business traffic growing faster (or declining less quickly) than leisure traffic. The traditional leisure destinations of France, Italy and Spain continued to see faster growth in the leisure market and these larger markets more than offset the losses in the smaller markets. The significant overall decline in the Belgian market can be attributed to the improvements in recent years in the Eurostar rail service from London to Brussels.

Table 45 Scheduled passengers from major UK airports by purpose of travel and country

Destination	2003 Passengers (000s)		2005 Passengers (000s)		Annual % growth 2003 - 2005		Leisure share	Leisure share
	Business	Leisure	Business	Leisure	Business	Leisure	2003	2005
Austria	320.6	750.6	430.3	858.0	15.9	6.9	70.1%	66.6%
Belgium	730.4	677.1	577.6	375.4	-11.1	-25.5	48.1%	39.4%
Denmark	603.5	998.0	753.8	1,067.5	11.8	3.4	62.3%	58.6%
Finland	260.0	278.7	261.5	367.6	0.3	14.8	51.7%	58.4%
France	2,087.9	4,763.6	1,866.2	4,905.8	-5.5	1.5	69.5%	72.4%
Germany	2,961.1	4,163.3	3,272.8	4,754.0	5.1	6.9	58.4%	59.2%
Ireland	1,760.5	4,854.9	2,116.5	5,433.4	9.6	5.8	73.4%	72.0%
Italy	1,785.6	5,652.6	1,773.5	6,249.1	-0.3	5.1	76.0%	77.9%
Netherlands	1,622.2	1,956.1	1,557.8	1,800.5	-2.0	-4.1	54.7%	53.6%
Portugal	391.4	1,407.3	372.8	1,318.7	-2.4	-3.2	78.2%	78.0%
Spain	1,547.4	7,407.4	1,734.3	10,610.6	5.9	19.7	82.7%	86.0%
Sweden	682.9	1,240.7	828.8	1,302.0	10.2	2.4	64.5%	61.1%
Switzerland	1,174.7	1,894.1	1,204.4	1,748.7	1.3	-3.9	61.7%	59.2%
Total	15,928.3	36,044.3	16,750.3	40,791.3	2.5	6.4	69.4%	70.9%

Source data aggregated from CAA surveys for the four major London airports (Heathrow, Gatwick, Luton and Stansted) and Manchester in 2003 and 2005

Further analysis of the UK CAA Passenger Survey Reports for 2003 and 2005 reveals other interesting trends:

The socio-economic profile of passengers travelling for leisure purposes at the two major London airports for low-cost air travel (Stansted and Luton) shows that the share of passengers who come from the lowest socio-economic groups (D and E) has increased at Luton from 8.5% in 2003 to 11.5% in 2005 and at Stansted from 7.8% to 9.5% during the same period suggesting that low-cost carriers are increasingly attracting passengers from the less affluent sections of society.

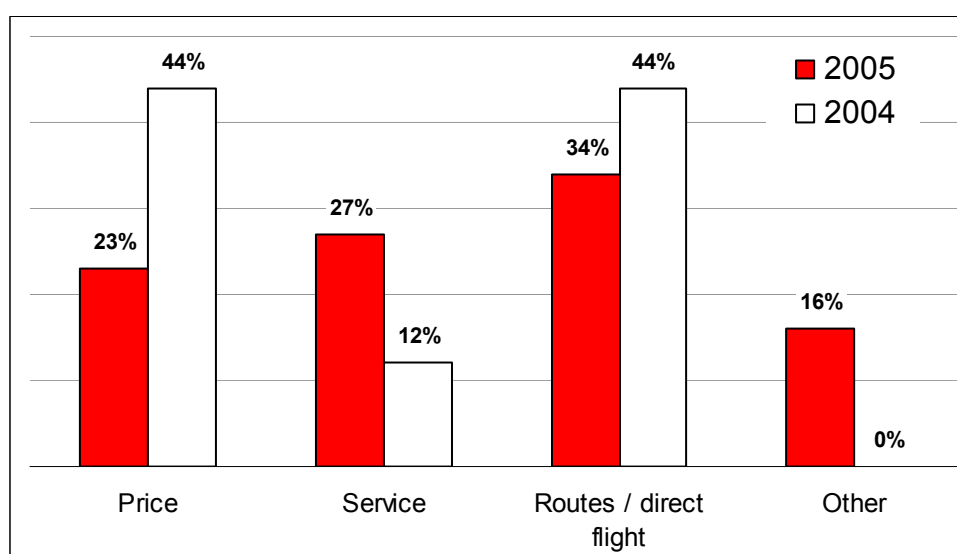
However, further analysis shows that the proportion of passengers from the most affluent socio-economic groups (A and B) is also increasing, at Luton from 32.8% to 34.0% and at Stansted from 33.5% to 41.1% between 2003 and 2005.

The idea that consumers are taking more frequent but shorter holidays appears to be supported by the data on average trip length. At Stansted the average trip length for UK originating passengers travelling on international scheduled flights for leisure purposes declined from 7.4 days in 2003 to 6.9 days in 2005. For foreign originating passengers the reduction was even more significant from 7.3 days to 6.4 days. However at Luton airport there was less of a change with foreign passengers reducing their average trip length slightly but for UK passengers there was a slight increase.

9.2 Business passengers

In the 2004 EU Annual Report noted the growing importance of price as a key driver of business travel decision-making (particularly in the short haul market). A 2005 research report by Morgan Stanley emphasised the relative importance that price has assumed in the business travel market. In this study, price is evaluated at similar levels of importance as service and routing. It is interesting to note that while the IATA Corporate Air Travel Study from 2004 showed service elements as being subordinate to price, this study shows that service has dramatically increased in importance relative to price and routing.

Figure 53 Important factors in choosing an airline (2004 – 2005)



Source: Morgan Stanley survey results, 2005

An annual survey of mainly UK business travellers by Company Barclaycard perhaps supports the Morgan Stanley report view that service is once again becoming more important to business travellers (Table 46). Full service airlines British Airways and Virgin increased their popularity with business travellers while bmibaby fell in popularity. Of the low cost carriers, only easyJet maintained its position. The results suggest that proportion of travellers willing to use LCCs for business has reached a plateau at about 70% of the market. Indeed the data suggest that there has been a slight increase in the proportion of travel taken in business class products.

Table 46 Business traveller behaviour and attitudes

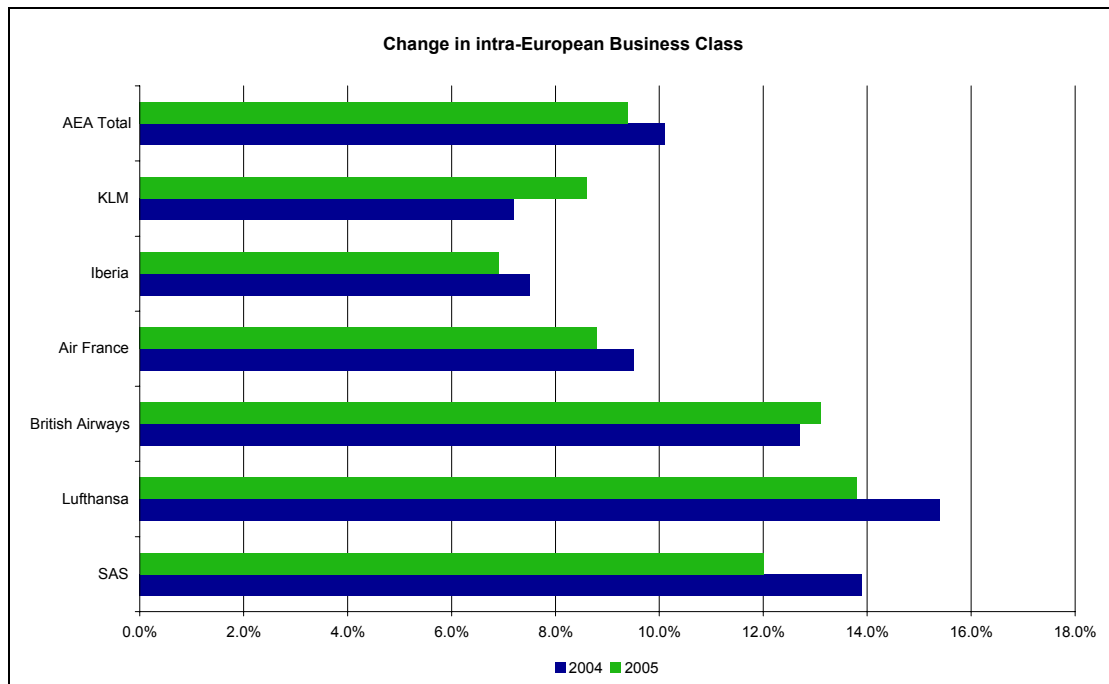
Traveller behaviour and attitudes	1998/99	2001/2002	2002/2003	2003/2004	2004/2005
Favourite airline for business travel					
British Airways	58%	47%	46%	35%	43%
KLM	5%	4%	4%	7%	4%
bmi/bmibaby	6%	6%	9%	5%	3%
Virgin	4%	Not in Top 5	6%	4%	7%
easyJet	1%	6%	4%	6%	6%
Ryanair	Not in Top 5	3%	1%	Not in Top 5	Not in Top 5
Use low cost airlines for business travel?	28%	62%	n/a	69%	71%
Travellers used e-tickets	19%	57%	64%	67%	n/a
Percentage of annual business travel in Business Class	33%	41%	38%	27%	29%

Source: Company Barclaycard

Indeed, according to AEA data, British Airways has enjoyed a slight increase in the proportion of travellers using business class products for intra-European travel. However, this pattern is not repeated across the rest of AEA carriers, with a 1% fall in the number of trips taken in business class. Particularly hit were Lufthansa and SAS, perhaps as business travellers migrate to the LCCs which have grown in importance in the two airlines' home markets. In a 2005 study, shortly to be published, over fifty aviation executives and analysts reached the consensus that the long term prognosis for business class products for short haul travel in Europe was not good, with 80% of respondents agreeing with the statement 'business class products will no longer be provided on the short haul market by 2015'¹⁰.

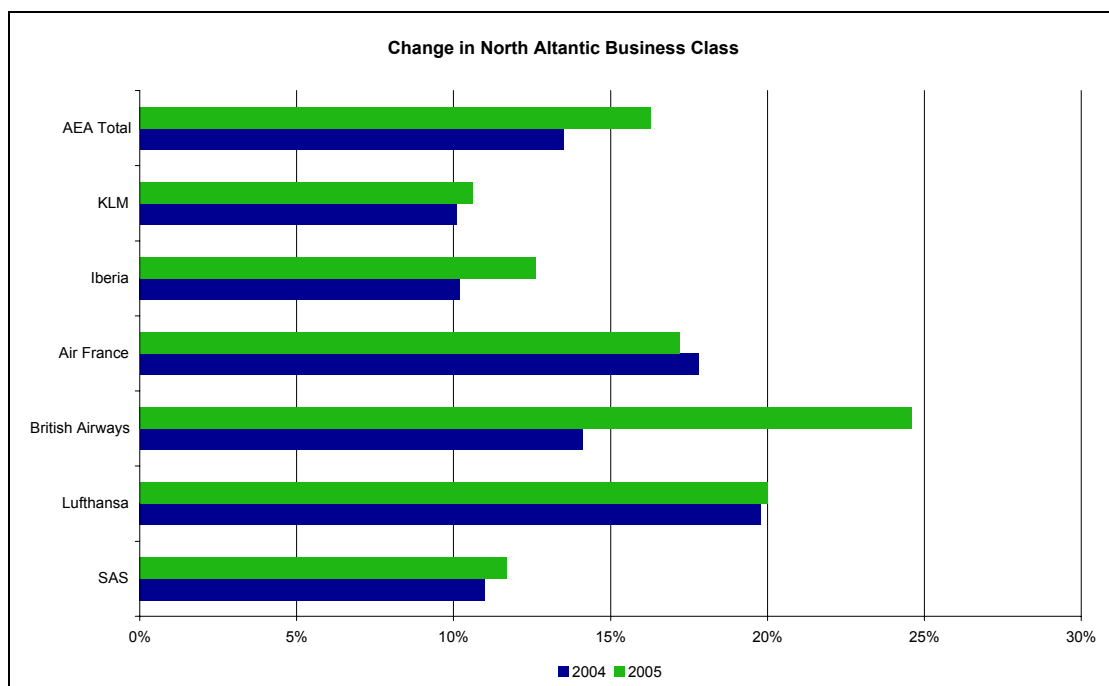
¹⁰ Mason, K. and Alamdari, F. (2007), "EU network carriers, low cost carriers and consumer behaviour: A Delphi study of future trends", Journal of Air Transport Management.

Figure 54 Changes in intra-European business class (2004 – 2005)



The return in importance of service to business traveller is more clearly shown by considering the North Atlantic market for AEA carriers. Overall there has been a significant rise in the proportion of travellers choosing to use premium services. British Airways in particular has enjoyed a large rise in the proportion of their North Atlantic passengers using premium cabins, perhaps as better economic conditions led corporations to loosen their travel policies.

Figure 55 Changes in North Atlantic business class (2004 – 2005)



One area that may have a future impact on the business travel market is the growing awareness of the environmental impact business travel has. The European corporate travel buyer association, the Institute of Travel Management, finished 2005 indicating that Corporate Social Responsibility (CRS) was likely to become a major issue in coming years. The ITM consequently launched a strategy for a greener approach to travel. This included more videoconferencing, efforts to "carbon-neutralise" air travel, and taking suppliers' green record into account. How companies can reduce the demand for air travel while maintaining economic growth will depend on how effectively companies assess the reasons why an executive is travelling and what is return on investment does the trip offer. Video-conferencing is most likely to be suited to replacing travel for internal company meetings and a 2005 survey of business travellers¹¹ found that 30% of business travel is for this reason. However, most analysts believe video-conferencing will not reduce the demand for travel in the coming years¹²

9.3 The leisure travel market

In December 2005 the UK CAA published a report entitled "Demand for Outbound Leisure Air Travel and its Key Drivers". It concluded that demand for outbound leisure travel from the UK may be relatively immature. Despite a rapid growth in recent years expenditure on overseas holidays (including air fares) still accounted for a relatively small proportion of total consumer expenditure. It predicted that as prosperity per household increased a growing share of expenditure could be spent on holidays abroad.

A detailed examination of historic data suggested that the income elasticity of outbound leisure air travel varies between 1.5 and 1.8 depending on the geographical destination market. Demand was most responsive to income changes on the North American market where a 10% increase in total consumer expenditure is expected to boost demand by 18%, all other factors being equal. A similar increase in total consumer expenditure is expected to boost demand for the Rest of the World and Western Europe by 16% and 15% respectively.

There was some evidence that elasticities in long-haul markets may have declined somewhat between 2000 and 2003. However, this was not interpreted necessarily as a clear sign that long-haul holidays were becoming less fashionable but that the impact of a number of external shocks (such as 9/11 and SARS) had had a particularly strong impact on long-haul demand. In contrast no decline in elasticities was identified in the Western Europe market.

The report also explored the hypothesis that demand for leisure air travel is elastic with respect to changes in air fares. The evidence collected suggested that this may be true in the case of traffic to some more popular short-haul destinations served by no frills airlines. Overall, however, the demand for leisure air travel was found to be moderately inelastic with respect to changes in air fares alone in all three aggregate geographical destination markets. The finding that demand for leisure air travel in aggregate was inelastic with respect to air fares alone was considered intuitively

¹¹ Mason, K. (2006), "The value and usage of ticket flexibility for short haul business travellers", *Journal of Air Transport Management*, Vol. 12, pp. 92 -97.

¹² Mason, K., and Alamdari, F. *ibid.*

plausible given that air fares typically account for just under one-third of the total costs of travel abroad.

A stated preference survey was undertaken at London Stansted airport which helped reconcile the findings from the econometric analysis that, on the one hand, demand for air travel is overall inelastic with respect to air fares alone, but, on the other hand that individual operators may experience a highly price sensitive reaction from their markets. The findings implied that while a route specific increase in air fares would cause more than proportionate reduction in the number of trips on a route level, the effect at the level of the market would be smaller because many passengers are willing to travel somewhere else cheaper. The survey also suggested that demand becomes more elastic at higher fare levels.

SECTION 10

AIRLINE ALLIANCES

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10 Airline alliances

10.1 Performance of the major alliance groups

It is difficult to say how much extra revenue is gained, or costs saved through economies of scale by those members of an airline alliance. Star Alliance and Sky Team do not reveal their figures, while Oneworld disclosed that its alliance fares and corporate sales products generated around \$400m among its eight members in 2005. It shows that the main benefits come from code sharing activities within the alliance.

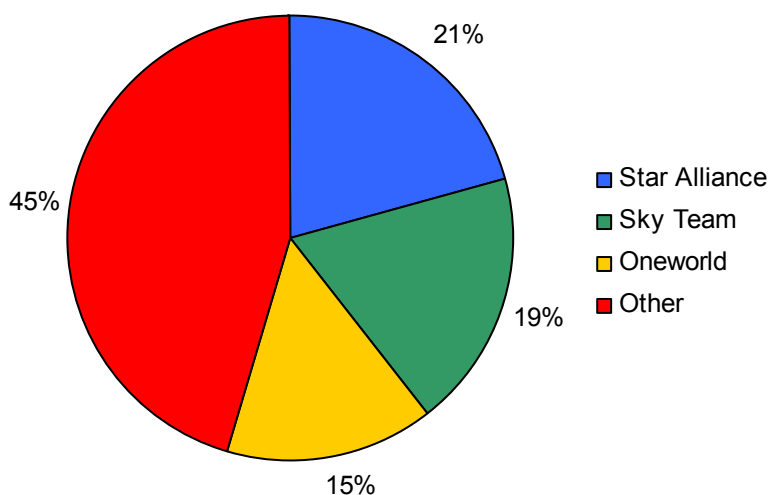
The three global alliances, Star Alliance, Sky Team, and Oneworld, accounted for over 54% of world RPKs in 2005. Between them they carried over 47% of all passengers, and had a revenue share of over 57%. The market shares for these three alliance groups are shown in Table 47. Now that they carry the majority of world passenger traffic, they are battling not just for the international market but for the domestic market too.

Table 47 Alliance Group Market Shares, 2005

	Pax (RPK m)	Pax (RPK %)	Pax (m)	Pax (%)	Rev (\$m)	Rev Share (%)
Star Alliance	763,194	20.9%	371	18.9%	98,514	24.5%
Oneworld	547,099	15.0%	221	11.4%	57,242	14.4%
Sky Team	675,515	18.6%	329	17.0%	73,638	18.4%
Total	1,985,808	54.5%	921	47.3%	229,394	57.3%

Source: IATA

Figure 56 Share of IATA airline traffic by alliance group, 2005



Source: IATA

The share of IATA airline traffic by alliance group in 2005 is taken from the previous table and displayed in Figure 56. It is predicted that Sky Team will soon overtake Star Alliance in terms of market share. It should be noted that several major airlines are not included in the major alliance groupings, including for example Emirates, Japan Airlines, and Malaysia Airlines.

Although few unaligned carriers remain truly independent around 45% of them are not a member of the big three airline alliances. The most significant unaligned carriers are shown in Table 48. Of the 12 largest, Japan Airlines is the most significant with an almost 3% share of passenger RPKs.

Table 48 Unaligned carriers market share, 2005

Airline	Link	Pax (RPK m)	Pax (RPK %)
Japan Airlines	OneWorld	102,354	2.8%
Emirates		51,398	1.4%
Air China	Star Alliance/Cathay Pacific	46,645	1.3%
Malaysia Airlines	Sky Team	44,226	1.2%
Virgin Atlantic	Singapore/Continental Airlines	30,222	0.8%
China Airlines	Sky Team/Thai Airways	29,567	0.8%
Saudi Arabian Airlines	Gulf Air/Pakistan International	25,825	0.7%
EVA Air	Star Alliance/OneWorld	21,755	0.6%
Aeroflot	Sky Team	20,648	0.6%
Air India	Star Alliance/Air France	18,990	0.5%
THY Turkish Airlines		18,595	0.5%
Gulf Air		17,863	0.5%
Total		428,088	11.7%

Source: Airline Business

The Airline Business magazine publishes a breakdown of the global operations for each of the major airline alliances. This is displayed in Table 49 and shows the weekly data in both July 2004 and July 2005. Sky Team had the most significant growth with 125,000 weekly frequencies (up 55,000), serving 664 destinations (up 152), in 146 countries (up 21).

Table 49 Weekly global operations

	Total Destinations	Duplicate Destinations	Countries Serves	Frequencies '000s	ASK billions
Star Alliance					
July 2004	798	317	140	121	28.0
July 2005	770	270	140	120	29.5
Change	-28	-47	0	-1	1.5
OneWorld					
July 2004	591	210	136	67	19.9
July 2005	549	157	133	63	19.4
Change	-42	-53	-3	-4	-0.5
Sky Team					
July 2004	512	120	125	70	13.4
July 2005	664	328	146	125	26.2
Change	152	208	21	55	12.8

Airline Business, 2004, 2005

There have been a series of peaks in alliance formation since the Airline Business magazine began monitoring the trend in 1994. Table 50 shows the number of airlines and alliances increased over the last decade. By 2005 a total of 114 airlines had formed 956 alliances, with an average of 8.4 alliances per airline..

Table 50 Trend in airline alliance formation

Year	Number of airlines	Number of alliances	Average per airline
1994	68	280	4.1
1995	77	324	4.2
1996	86	390	4.5
1997	89	363	4.1
1998	98	502	5.1
1999	102	513	5.0
2003	108	838	7.8
2004	112	930	8.3
2005	114	956	8.4

Source: Airline Business

10.2 Strategic partnerships and European airlines

An important part of the European airline business has always been collaboration. The airline alliance activity seen in 2005 continues to show no sign or slowing with the

industry witnessing a significant number of tactical and strategic partnerships. Table 51 shows a list of all agreements involving European carriers in 2005.

The philosophy behind strategic alliances continues to encompass the following factors:

- An increase in the level of traffic through access to new markets and traffic feed which would otherwise not have been possible.
- An ability to code share which has the effect of upgrading interline connections to online status, offering substantial advantages in selling, especially in terms of CRS display.
- A greater marketing power through increased joint market share, frequent flyer programme combination, ease of baggage transfer, single check-in for multiple sector trips, and shared airport lounges.
- An increase in load factors through improved traffic feed and through fares
- The use of joint scheduling and hub coordination to increase operational efficiency
- The use of cost reductions through the operation of joint services and rationalisation of schedules, reciprocal sales arrangements, joint ventures such as catering and maintenance, and the joint purchasing of supplies.
- An improvement of customer benefits

The concept of airline alliances originally developed to earn revenue. As regulation restricted airlines from merging they decided to grow revenue through their membership of an alliance. It was envisaged that aircraft could be purchased in bulk, operations could be synergised, and prices would ultimately come down. This was to some extent successful except that joint aircraft purchases became impossibly difficult. The future may see savings come from direct sales, distribution, ticketing, and scheduling.

The largest second-tier growth came during the summer of 2005 with Sky Team welcoming Air Europa, Copa Airlines, Kenya Airways, Tarom, and Portugalia, to its associate membership programme. It also prepares to have Aeroflot and China Southern Airlines join the scheme. The Air France takeover of KLM is expected to result in changes to Sky Team and the KLM-Northwest Airlines partnership in particular.

Star Alliance saw Adria Airways, Blue1, and Croatia Airlines, join its regional membership programme. It gained Swiss through its ownership of Lufthansa and expected to have South African Airways join next April.

Oneworld will have Malev join as a full member next year. While its historic growth has been limited it is hoping to use Cathay Pacific's stake in Air China to gain a foothold in China. It may also use relationships between Air Sahara and both American Airlines and British Airways to expand into India. It is also actively trying to persuade Japan Airlines to join the alliance.

Lufthansa and TAP Air Portugal have started an extensive strategic cooperation. As of 1st February 2005, the two airlines offer code-sharing flights. Also in other areas such as baggage handling, airport services and lounges, coordinated procedures will all contribute to an improvement in travel comfort for the passengers.

Table 51 Airline alliances (code shares) commenced by European airlines in 2005

Airline 1	Global Alliance	IATA Code	Airline 2
Aegean Airlines		LH	Lufthansa
Aeroflot Russian Airlines		KM	Air Malta
Aeroflot Russian Airlines		AZ	Alitalia
AeroSvit Airlines		CY	Cyprus Airways
Air Canada	Star Alliance	AP	Air One
Air Europa		MU	China Eastern Airlines
Air France	Sky Team	CO	Continental Airlines
Air Malta		SU	Aeroflot Russian Airlines
Air Malta		DM	Maersk Air
Air Malta		QF	Qantas Airways
Air Mauritius		LT	LTU International Airways
Air One		AC	Air Canada
Air One		TP	TAP Portugal
Alitalia	SkyTeam	SU	Aeroflot Russian Airlines
All Nippon Airways	Star Alliance	LO	LOT Polish Airlines
Austrian Airlines	Star Alliance	SA	South African Airways
Austrian Airlines	Star Alliance	TP	TAP Portugal
China Eastern Airlines		UX	Air Europa
Continental Airlines	SkyTeam	AF	Air France
Cyprus Airways		VV	AeroSvit Airlines
Kuwait Airways		TK	THY Turkish Airlines
LOT Polish Airlines	Star Alliance	NH	All Nippon Airways
LOT Polish Airlines	Star Alliance	SK	Scandinavian Airlines
LTU International Airways		MK	Air Mauritius
Lufthansa	Star Alliance	A3	Aegean Airlines
Lufthansa	Star Alliance	TP	TAP Portugal
Maersk Air		KM	Air Malta
Qantas Airways	OneWorld	KM	Air Malta
Royal Air Maroc		TK	THY Turkish Airlines
Scandinavian Airlines	Star Alliance	LO	LOT Polish Airlines
South African Airways		OS	Austrian Airlines
Spanair	Star Alliance	TP	TAP Portugal
TAP Portugal	Star Alliance	AP	Air One
TAP Portugal	Star Alliance	OS	Austrian Airlines
TAP Portugal	Star Alliance	LH	Lufthansa
TAP Portugal	Star Alliance	JK	Spanair
TAP Portugal	Star Alliance	UA	United Airlines
THY Turkish Airlines		KU	Kuwait Airways
THY Turkish Airlines		AT	Royal Air Maroc
United Airlines	Star Alliance	TP	TAP Portugal
Virgin Atlantic Airways		DJ	Virgin Blue
Virgin Blue		VS	Virgin Atlantic Airways

Source: Airline Business

Members of the airlines' frequent flyer programmes, Miles and More and Navigator, can collect miles as of 1st February 2005 on flights of the respective other airline. The redemption of miles with the respective other airline will be made possible by the admission of TAP to the Star Alliance which is scheduled for spring 2005.

At the same time TAP will transfer its operations and passenger check-in facilities to the Star Alliance/Lufthansa terminals at Frankfurt Airport (Terminal 1) and at Munich Airport (Terminal 2), in order to provide its passengers with rapid and convenient transfers between TAP and Lufthansa as well as the other partner airlines.

SECTION 11

AIRLINE DISTRIBUTION

11 Airline Distribution

The development of the internet as a suitable alternative method of distribution has enabled the airlines to bring greater pressure to bear on the established means of distribution and 2005 represented a year of continued positioning and repositioning in the distribution field. This comes as major airlines strive to refine their distribution strategies so they can connect more directly with their customers.

The low cost carriers have shown the internet can be a very effective means of distribution with most LCCs achieving over 85% of sales through this very low cost channel.

Table 52 Proportion of European LCC sales made online

	%
Jet2.com	97
bmibaby	95
FlyMe	95
Vueling	94
Ryanair	94
easyJet	94
Germanwings	94
hix	90
flybe	85
Monarch Scheduled	85
Sterling	85
Wizz Air	85
Norwegian	75
Virgin Express	70
SkyEurope	56
Air Berlin	52

Source: Airline websites

In 2004, British Airways attempted to move as many bookings as possible to its cheapest distribution channel, the internet. During 2005 British Airways sold 54% of short haul point-to-point non-premium services on their own website (BA.com), and across their entire network the airline sold 25% of its tickets via this channel. This level was ahead of its planned channel shift strategy reported in the 2004 EU Annual Report and by selling via BA.com it avoided both agency and GDS fees. Airlines argue that for the most simple itineraries and within their home markets the travel agent has limited advisory work to do and the GDS cost does not reflect its fees to list the inventory and record the sale.

In response, the Travel Management Companies (these former travel agents now gain most of their revenues direct from travellers in the form of service fees) recognise that for simple itineraries (70% of journeys are point to point¹³) they have to be able offer travellers low cost booking options like self-booking tools, and for the remaining 30% of bookings offer travel clients a number of alternative booking methods.

¹³ Richard Lovell, Carlon WagonLit Travel, 2005

While most airlines had removed all or most travel agency commissions by 2005, the remaining few cut their agency payments in 2005¹⁴. Having achieved significant savings from these cuts, the airlines have focused increasingly on the Global Distribution Systems in a bid to further drive down their distribution costs.

Table 53 Distribution costs for airlines as a percentage of ticket costs

Distribution third parties	Cost as % of ticket prices
GDS	8 – 11%
Travel Agency	1 – 2 %
Mercantile (Credit Card) fee	2 – 3%

UATP (Universal Air Travel Plan), Airline Business July 2005

Examining the distribution chain it is clear that GDS fees now represent the largest single item in the distribution chain for airlines. The GDSs account for some 65% of all air bookings¹⁵. Airlines globally spend \$5 billion per annum on GDS fees (Airline Business, July 2005). The GDSs have well established global communication networks that enable airlines to list, virtually instantaneously, their inventories of available seats and prices. Since their establishment in the 1970s the airlines have been the principal shareholders of the main GDSs and were consequently regulated to ensure that every airline's inventory was listed in the same fashion on all systems. However after most US airlines divested themselves of their GDS shareholding the US deregulated the GDS market in 2003 enabling airlines to negotiate 'content-for-discount' deals with preferred GDSs.

While US carriers have divested of GDSs, the GDSs with the largest market share in Europe with 49% of the market, Amadeus, was 45.7% owned by Lufthansa, Iberia and Air France.

Table 54 GDS market structure by region

	USA/ Canada	Central/ South America	Europe/ Middle East	Asia/ Pacific	Global Average
Amadeus	9%	38%	49%	15%	26%
Galileo	21%	6%	31%	15%	22%
Sabre	42%	50%	13%	4%	24%
Worldspan	28%	6%	8%	4%	14%
Abacus				19%	4%
Topas				4%	1%
Infini				4%	1%
TravelSky				36%	8%

Source: Star Alliance, 2005

¹⁴ For example, Air France in April 2005 stopped paying any commission to travel agents that charge consumers for their services which led to a 14.2% reduction in its distribution costs in 2005

¹⁵ Richard Clarke, Travel Technology Research

In 2005 most airlines were in the second of a three year deal with GDSs that gave the airline a discount on fees for continued full content provision. However the airlines still wish to see a reduction in their cost exposure to the GDSs, and the growth of the internet as a suitable alternative method by which airlines can distribute tickets has led to airlines pursuing channel shift strategies (as described in the Cranfield ‘Analysis of the EU Air transport industry, 2004’) and to seek new Internet Protocol (IP) distribution solutions.

The sixteen airline strong Star Alliance requested proposals from a number of Global Distribution New Entrants (GNE) to help reduce their collective \$11 billion annual spend on distribution of which GDS fees accounted for nearly \$2 billion. Companies such as G2 Switchworks and ITA Software were invited to develop methods by which customers could access the airlines’ inventories directly via their websites but in an integrated fashion using IP infrastructure at a significantly lower cost than traditional GDS methods. This move has sent the GDSs the very clear message that airlines are willing to seek out the lowest cost way to distribute their product.

Table 55 Star Alliance’s \$11bn distribution costs

Distribution activity	Proportion of distribution costs
Promotion and advertising	20%
media	8%
personnel	2%
loyalty programmes	2%
other	7%
CRS /GDS fees	18%
Credit card fees	18%
Sales	22%
sales force/reservations	5%
benefits	6%
management and staff	3%
other	8%
Commissions (passenger)	19%
Commissions (cargo)	1%

Source: Star Alliance

The potential threat of GNEs has meant the main GDSs (Sabre, Amadeus, Galileo and Worldspan) are having to address the underlying complaints of the airlines:

- For simple bookings the GDS systems offer more sophistication (and thereby cost) than the airlines need
- For all bookings the costs have been rising without any transparently obvious reason at the same time that the GDSs have been enjoying very high levels of profitability.

Consequently, the GDSs are looking at new business models that enable them to offer a better value proposition to the full-service carriers, while also looking to offer new products to attract low-cost carriers that have mainly avoided GDS listings. In short the GDSs recognise they need to change their business model to offer better value and also recognise that as more bookings are made directly, they need to diversify into new areas such as IT services and adding other online travel-related content, such as

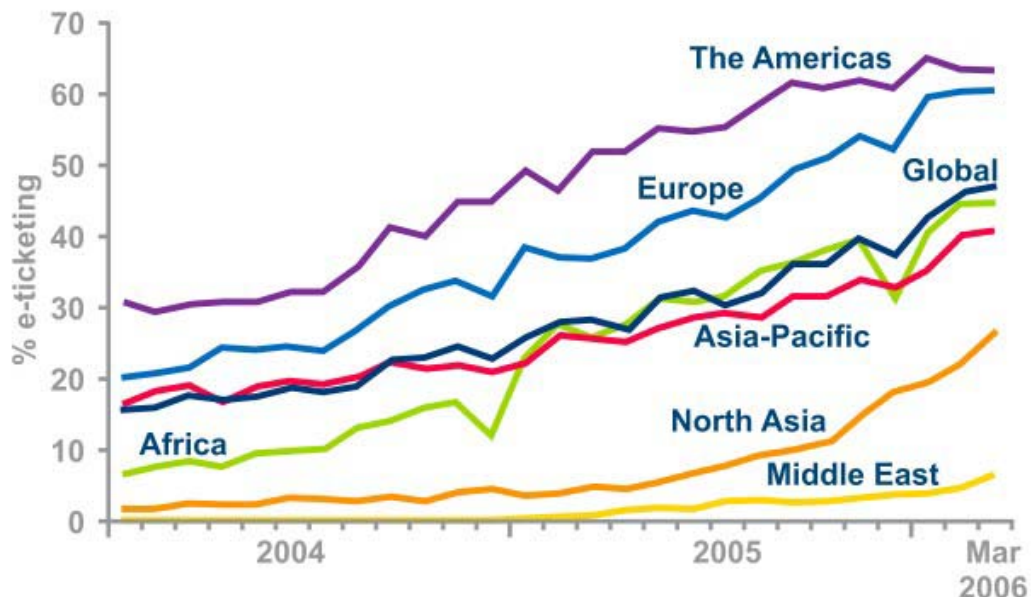
hotels and car hire. Amadeus, for example noted that it had attracted 25 small low cost carriers onto a new low-cost value service it had introduced and was seeking to sign up some large LCCs. EasyJet is one large LCC that is considering listing on such a service¹⁶ as it seeks to increase the proportion of business travellers flying with them, and, without a GDS listing, corporate travellers may not see its fares on their companys' self booking tools. Cendant, the owner of Galileo, has recently bought the airline internet portal Orbitz indicating that GDSs are increasingly looking to a number of new business models to serve the market in the internet age.

As travellers become increasingly used to the fare transparency offered by the internet and travel suppliers, and intermediaries are attracted to it due to its low costs, the effort required by the traveller to find the lowest fare has increased dramatically. Meta-search engines for travel are gaining a small if growing share of the travel market. These engines search dozens of sites at once, searching airlines, hotels, resorts, rental car firms and others for any offering that meets the traveller's search demands. The results are then presented according to the travellers search criteria. The search engine makes money from a referral commission paid by the supplier for the traveller clicking from the meta-search engine through to their websites.

While this market is very small at the moment (2% according to Airline Business, July 2005) the developing interest from major internet companies such as Yahoo and Google may mean this channel will grow in importance in the future.

One of the key goals of IATA's Simplifying the Business programme is to achieve 100% e-ticketing by the end of 2007. Removing the need for paper tickets in the airline industry will significantly reduce costs for airlines both in producing paper tickets during the sales process and also at the airport.

Figure 57 E-Ticket penetration by IATA airlines by region



Source: IATA

¹⁶ PhoCusWright Distribution executive conference in Paris, April 2005

IATA estimates that the cost of producing an e-ticket is \$1 compared to \$10 for a paper ticket. If the industry achieves 100% e-ticketing it would save the industry an estimated \$3 billion per annum. By November 2005, 40% of all tickets recorded in IATA's BSPs (Billing and Settlement Plans) were sold as e-tickets, with Europe achieving about 60% in December 2005 and some airlines exceeding this level significantly (e.g. by December 2005, BA issued 84% of tickets in e-ticket format)

Interline e-ticketing is particularly hard to achieve especially for airlines that interline with airlines in less developed regions. IATA's programme appears to be on-track but irrespective of whether the programme delivers its 100% objective the progress so far has helped airlines remove an unnecessary and significant cost burden.

SECTION 12

AIRCRAFT AND MANUFACTURERS

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12 Aircraft and manufacturers

12.1 Large airliners (over 120 seats)

2005 was a record breaking year for both Airbus and Boeing with net orders for their commercial airliners totalling 2,057, with a total book value estimated to be around \$193 billion. Unlike the previous record year, 1998, when the US carriers dominated the order book, the emerging markets of the Middle East, Asia and Latin America and the Low Cost Carriers of Europe accounted for much of total.

Airbus, for the third year running, bettered its US rival with 52% market share in terms of net orders, although, due to the American manufacturer's increased orders for wide-bodies, it is estimated that the market share by value was more like 43% to Airbus and 57% for Boeing.

The number of aircraft delivered by Airbus and Boeing in 2005 was 668. Airbus' total was 378 (up from 320 in 2004) while Boeing's was 290 (up by five on the previous year).

12.1.1 *Airbus*

The A320 family gained the lion's share (86%) of the European manufacturer's orders with some 912 net orders, following particularly the placement of large orders by operators in China, and India. In the wide-body market the A330 and A340 made up 79 net orders while the A350 gained 87 orders and the A380 picked up 20 new orders.

The A380 made its maiden flight on 27 April 2005 and so began the 18 month test programme of flight trials and certification for the new superjumbo.

The recently launched A350 continued to be promoted by Airbus, although increasingly airlines and leasing companies were voicing concerns about its competitiveness compared with the more radical Boeing 787.

The average value per aircraft for Airbus in 2005 was about \$80m - a decrease of some 13% on 2004 figures, possibly due to the preponderance of narrow body orders. The total value of sales of Airbus in 2005 was estimated as being \$27.3 billion, around 8.5% up on the previous year.

12.1.2 *Boeing*

The Boeing 737NG family continued to be the most popular family for the US manufacturer with a total of 569 net orders received in 2005.

235 orders were received for the 787 (formerly known as the 7E7); 154 for the 777; 43 for the 747 family (including 18 for the newly launched 747-8) and 15 for the 767, the latter being for freighter variants.

Boeing's 787 reached a number of milestones in 2005, namely the firming of the configuration, building of the first composite fuselage sections and the unveiling of the flight deck.

At the large aircraft end of the market, Boeing launched the 747-8 Intercontinental – offering a stretch over the current 747-400 aircraft. They also launched a freighter variant of the 777.

The latest passenger variant of the 777 family, the 777-200LR, set a new record for the longest distance flown non-stop by a commercial airliner with an eastbound flight from Hong Kong to London which covered 21,578 km (11,664 nm) and lasted 22 hours and 42 minutes.

Meanwhile the last 757 was delivered marking the end of a 23 year and over 1,000 aircraft production run. Boeing also announced that it would be ceasing production of the ill-fated 717 aircraft in 2006. Initially developed by McDonnell Douglas as the MD-95, the aircraft was inherited when Boeing took over its US rival, but it soon became an orphan in its new home, since it competed with the smaller variants of the highly successful 737NG family.

The average value of aircraft sold by Boeing in 2005 was \$109m, 5.8% up on the previous year and some 37% more than the respective value for Airbus (again illustrating the different mix of aircraft ordered). Meanwhile the total value of sales generated by Boeing in 2005 was estimated at \$22.7 billion, an increase of 7.8% on the previous year.

12.2 Regional airliners

The market for regional airliners in 2005 saw orders for small regional jets continue to decline, but the resurgence of the turboprop.

12.2.1 ATR

The Franco-Italian turboprop manufacturer had its best annual orderbook for over ten years with a total of 90 aircraft ordered, compared to 12 in 2004, helped by a major order for 30 aircraft from Air Deccan. Production of the ATR42 and 72 increased from 13 in 2004 to 15 in 2005.

12.2.2 AvCraft and Raytheon

AvCraft filed for insolvency in March having struggled to make a business from the 328 production line it had acquired when Fairchild Dornier gave up in 2002. Raytheon made no new sales of its long-running 1900 aircraft although it is still being marketed.

12.2.3 Bombardier

The Canadian manufacturer's net orders plummeted in 2005 to 60, down from 162 in 2004. In terms of orders for its regional jets it experienced a net loss of one order (mainly due to the dramatic fall off in 50 seat orders, it suffered a net loss of 69 CRJ200 orders in 2005). This was compensated for by the relative success of its turboprops with 10 Dash8Q300s and 49 Q400s ordered in the year

In terms of deliveries, regional jets were down from 175 in 2004 to 125 in 2005 while its Q Series doubled from 19 to 28.

12.2.4 Embraer

Total net orders for the Brazilian manufacturer totalled 90, representing a drop of 18 over 2004. The ERJ family suffered a net loss of seven orders in the year mirroring the collapse in the 50-seat market. However, the EJet family fared better with 97 orders booked.

Overall deliveries at Embraer in 2005 at 120 showed a 10% decline on 2004's figures with small jet deliveries almost halved to 46 aircraft and with 72 of the E-jet family delivered.

The tables below indicate the numbers of aircraft ordered from and delivered by the major western commercial aircraft manufacturers. Table 56 includes the narrow-body and wide-body aircraft manufactured by Airbus and Boeing. Data includes A319CJ and Boeing BBJ. In the column 'changes' a negative entry refers to cancellations, while a positive number indicates orders converted from one model to another, without a 'new' order taking place.

Table 56 Jet airliner orders and deliveries

	2005					2004	
	Deliveries	Orders	Changes	Net Orders	Backlog	Deliveries	Net Orders
Airbus							
A300	9	7	-37	-30	15	12	2
A310	0	0	0	0	5	0	0
A318	9	41	-5	36	69	10	-18
A319	142	206	+3	209	446	87	105
A320	121	568	-4	564	959	101	185
A321	17	103	0	103	178	35	7
A330	56	64	-10	54	186	47	48
A340-300	4	3	-3	0	5	5	0
A340-500/600	20	12	0	12	68	23	27
A350	0	87	0	87	87	0	0
A380	0	20	0	20	159	0	10
Airbus total	378	1,111	-56	1,055	2,177	320	366
Boeing							
717	13	0	-14	-14	5	12	8
737	212	574	-5	569	1,133	202	147
747-400	13	30	-5	25	44	15	10
747-8	0	18	0	18	18	0	0
767	10	19	-4	15	30	9	9
777	40	153	+1	154	288	36	42
787	0	235	0	235	291	0	56
Boeing total	290	1,029	-27	1,002	1,809	285	272
Grand total	668	2,140	-83	2,057	3,986	605	638

Source: Flight International

Table 57 Regional jet airliner orders and deliveries

	2005				2004		
	Seats	Deliveries	Orders	Backlog	Deliveries	Orders	Backlog
AvCraft							
328Jet*	33	6	-6	0	8	18	12
Bombardier							
CRJ100/200	50	35	-69	19	75	69	123
CRJ440	40	12	11	0	33	0	1
CRJ700-701	70	49	43	64	52	51	70
CRJ700-705	75	15	0	0	0	-10	15
CRJ900	90	14	14	20	15	20	20
Bombardier total		125	-1	103	175	130	229
Embraer							
ERJ-135	37	2	0	15	1	1	17
ERJ-140	44	0	0	20	0	0	20
ERJ-145	50	46	-7	10	87	9	66
170	70	46	40	106	46	38	112
175	78	14	7	8	0	15	15
190	98	12	36	179	0	45	155
195	108	0	14	29	0	0	15
Embraer total		120	90	367	134	108	400
Grand total		251	83	470	317	256	641

Source: Flight International

Table 58 Turboprop airliner orders and deliveries

	2005				2004		
	Seats	Deliveries	Orders	Backlog	Deliveries	Orders	Backlog
ATR							
ATR 42	48	5	17	16	5	1	4
ATR 72	68	10	73	73	8	11	10
ATR total		15	90	89	13	12	14
Bombardier							
Dash 8 Q200	37	1	2	2	1	1	1
Dash 8 Q300	50	9	10	21	8	18	20
Dash 8 Q400	74	18	49	57	10	13	26
Bombardier total		28	61	80	19	32	47
Raytheon							
Beech 1900	19	0	0	0	1	1	0
Grand total		43	151	169	33	45	61

Source: Flight International

SECTION 13

PUBLIC SERVICE OBLIGATIONS

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13 Public Service Obligation (PSO)

13.1 Introduction

One of the consequences of deregulating Europe's airline industry has been the need to provide direct subsidies in order to ensure the continuation of air services to remoter communities. EU Member States are allowed to award subsidies for such operations under Article 4 of Council Regulation (EEC) No. 2408/92 on Access for Community Air Carriers to Intra-Community Air Routes. They are administered, awarded and funded by both national and regional governments, either directly or indirectly through associated agencies. In Finland, Greece, Iceland, Ireland, Norway, Portugal and Sweden, national government departments administer air service PSOs, while in France, Germany, Italy and Spain, administration is in the hands of regional authorities. In the UK, where PSOs only exist in Scotland, the Scottish Executive is responsible for administering the routes operated from Glasgow and the respective regional authority for services provided in Orkney, Shetland and Western Isles.

13.2 Use of the PSO

Ten Member States (Finland, France, Germany, Greece, Ireland, Italy, Portugal, Spain, Sweden and the UK) and two European Economic Area countries (Iceland and Norway) had PSOs in 2005, with France and Norway accounting for around one half of these. During 2005 an additional forty PSO were imposed, while on six routes the obligations were lifted (Table 59). This information relates only to the publication of the lifting or imposition of obligations in the Official Journal.

PSOs require the operating carrier to adhere to fixed levels of service for the duration of the contract. In the majority of cases, the airline is required to provide a minimum daily service frequency and/or number of seats, with the administering authority determining what this should be. There are often specific timetabling requirements to which the operator must comply. Many of these are there to enable passengers to undertake day return trips and to make convenient onward connections. In addition, there have been an increasing number of conditions set relating to the type of aircraft that must be employed.

The maximum fare that may be charged on PSO routes is stipulated. Wide variations exist however in these levels for routes of similar distance and traffic volumes, with certain countries being much more generous to travellers in terms of setting lower maximum fares and paying higher levels of subvention.

Table 59 PSO lifted and imposed during 2005

Finland	France	Iceland	Norway
imposed	imposed	lifted	Imposed*
Helsinki-Mikkeli	La Rochelle-Lyon	Corsica-Lyon	Lakselv-Tromsø
Helsinki-Savonlinna	La Rochelle-Poitiers	Corsica-Montpellier	Andenes-Bodø
Helsinki-Varkaus		Le Havre-Rouen	Andennes- Tromsø
		Le Havre-Strasbourg	Svolvær- Bodø
		St Brieuc-Nantes	Leknes- Bodø
		St Brieuc-Paris	Røst-Bodø
			Narvik-Bodø
			Brønnøysund-Bodø
			Brønnøysund-Trondheim
			Sandnessjøen-Bodø
			Sandnessjøen-Trondheim
			Mo I Rana-Bodø
			Mo I Rana-Trondheim
			Mosjøen-Bodø
			Mosjøen-Trondheim
			Namsos-Trondheim
			Rørvik-Trondheim
			Florø-Oslo
			Florø-Bergen
			Førde-Oslo
			Førde-Bergen
			Sogndal-Oslo
			Sogndal-Bergen
			Sandane-Oslo
			Sandane-Bergen
			Ørsta-Volda-Oslo
			Ørsta-Volda-Bergen
			Fagernes-Oslo
			Røros-Oslo

* The Norwegian PSO routes are tendered for in 16 route groupings, some of which may be combined.

Source: Wilmer, Cutler, Pickering, Hale and Dorr, 2005.

13.3 PSO tendering

It is clear that most PSO routes continue to be operated by locally based airlines. It would appear that carriers with previous experience of operating such routes have an advantage over new entrants. The comparatively short time allowed between notification that a carrier's tender has been selected and when it must commence operation has been cited by some airlines as a deterrent to submitting a bid. This is particularly the case when a carrier based in one Member State is contemplating a PSO bid on a route in another country. The leasing of aircraft, the setting up of an operating base and the arranging of crewing, ground handling, maintenance, etc., all take time and may represent a significant outlay to a small carrier. In the event of not winning the tender round, such an airline may be faced with significant sunk costs.

Norway has the largest number of PSO routes in operation and is the most open in terms of the information it provides in respect of the tendering process. Initially, the

Norwegian Government required that its PSO routes be tendered for all together in one bid, but subsequently the routes have been offered in fifteen separate groupings in order to encourage more airlines to tender. In the most recent tendering round covering the period 2003-2006, the possibility of combining route areas in the bidding process has been introduced. The use of different sized aircraft has also been permitted, to encourage bids from smaller operators. The net effect of these changes has been positive with an increase in the number of bids received from carriers other than the long established operator, Widerøe, and a 5.2% decrease in the annual operating subsidy. Table 60 shows the number of bids received for each of the route areas and the winning carrier in each case.

Table 60 Norwegian PSO routes 2003-2006

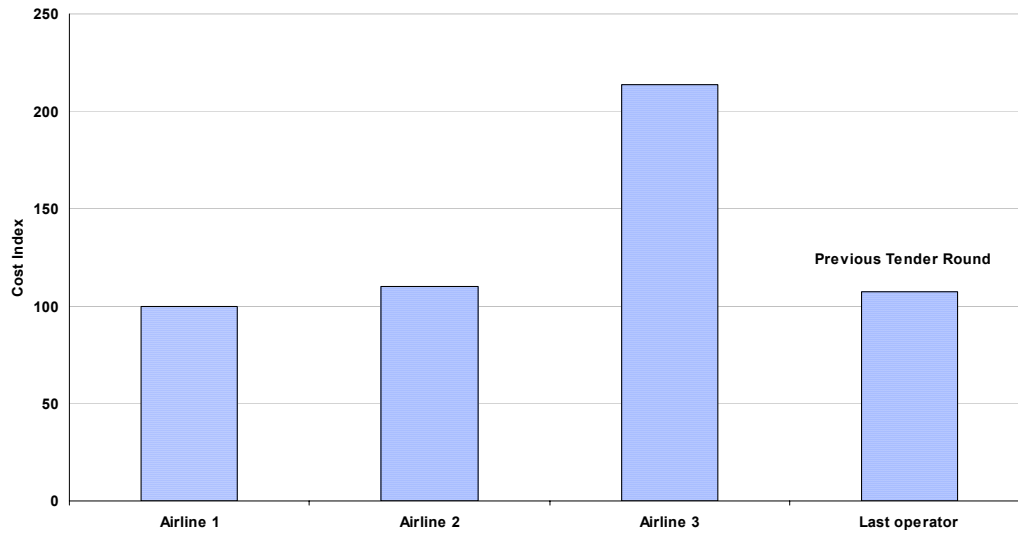
Route area	Tendering carriers	Winning tender
1	Widerøe, Arctic Air	Widerøe
2	Widerøe, Arctic Air	Widerøe
3	Norwegian Air Shuttle, Widerøe, Kato Airline	Norwegian Air Shuttle*
4	Norwegian Air Shuttle, Widerøe, Kato Airline	Norwegian Air Shuttle*
5	Widerøe	Widerøe
6	Widerøe	Widerøe
7	Kato Airline, Arctic Air, Widerøe	Kato Airline
8	Kato Airline, Arctic Air, Widerøe	Kato Airline
9	Widerøe, Kato Airline, Coast Air	Widerøe
10	Widerøe, Arctic Air	Widerøe
11	Danish Air Transport, Widerøe, Coast Air	Danish Air Transport
12	Widerøe, Coast Air	Widerøe
13	Widerøe, Coast Air	Widerøe
14	Coast Air, Danish Air Transport, European Executive Express, Arctic Air	Coast Air
15	Widerøe, Coast Air, Danish Air Transport, European Executive Express, Kato Airline	Widerøe

* Norwegian Air Shuttle later gave notice that it wished to withdraw from the contract.

Source: Ministry of Transport and Communications, Norway.

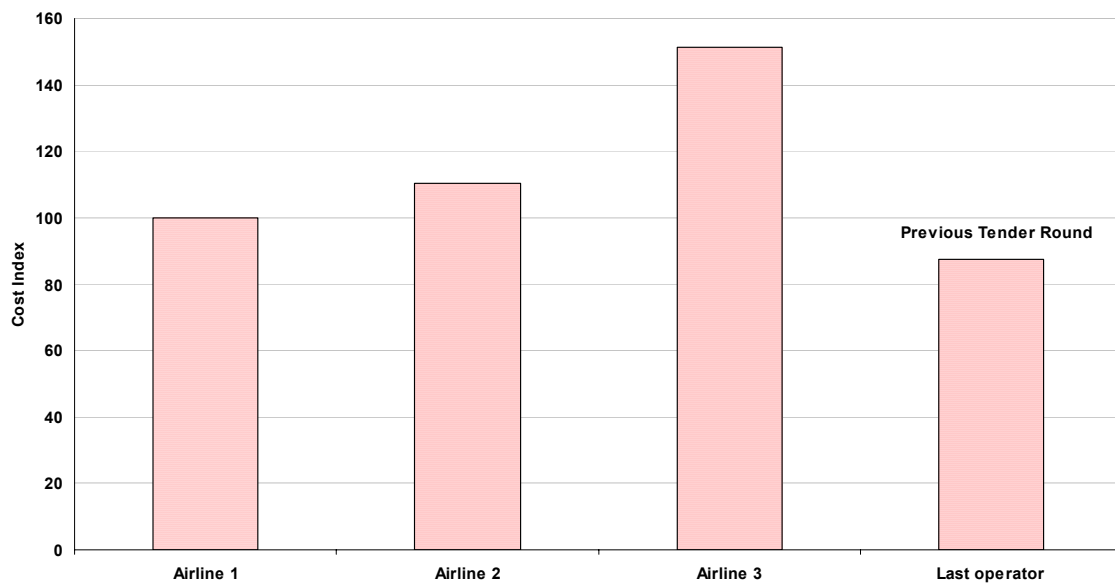
Norway's Ministry of Transport and Communications provides a great deal of information to prospective bidders, including details of the subsidy levels sought by each carrier during previous tendering rounds, the amount of traffic carried and revenue generated on each route, the proportion of full fare traffic by route and the amount of transfer traffic on each sector. In this way an accurate picture of demand levels can be provided to would-be operators, thereby reducing some of the uncertainty associated with operating in a new market. Despite this, the level of subvention required by tendering carriers to operate specific route area PSOs in Norway reveals some wide variation. Figure 58 and Figure 59 show the amounts of subsidy required by the airlines tendering for two of the route areas covering the period 2003-2006. The names of the bidding carriers and the actual route areas are excluded here for reasons of confidentiality.

Figure 58 First Route Example: Tenders for 2003-2006



Source: Ministry of Transport and Communications, Norway.

Figure 59 Second Route Example: Tenders for 2003-2006



Source: Ministry of Transport and Communications, Norway.