

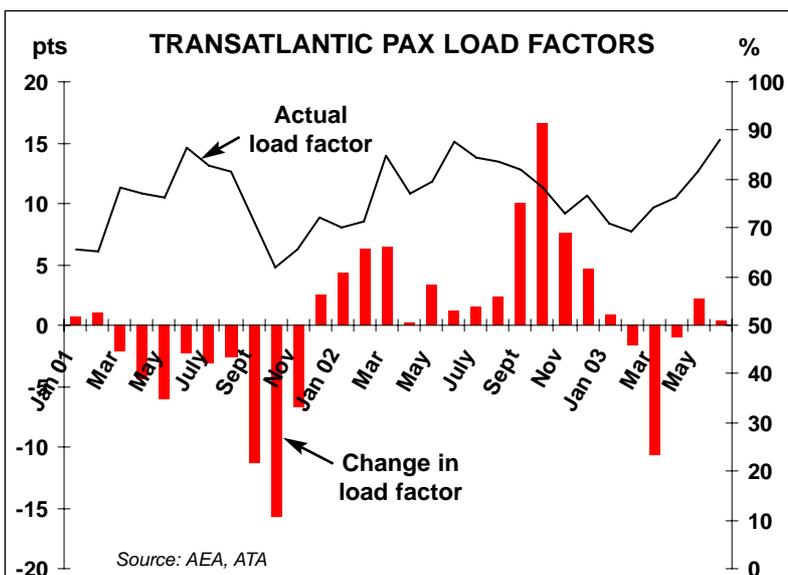
Long-awaited upturn?

Stockmarkets are certainly looking more optimistically or maybe just more speculatively at airline shares. For example, over the past three months (to the end of June) the prices of some of the US network carriers have skyrocketed - American's share price has quintupled, Continental's tripled. European carriers like BA and KLM has posted more modest but still sizeable gains - around 35%. It might have been thought that the successful LCCs were fully valued yet JetBlue (see pages 16-19) has experienced a 50% rise in its stockmarket valuation.

Back in the real world, there is some tentative evidence of an upturn. The most recent data on transatlantic traffic for the last two weeks of June shows a 9-10% rise compared to last year. Asian traffic was still very depressed but, as suggested in the previous issue of *Aviation Strategy*, schedules have been restored and traffic has come back much more quickly after the end of the SARS outbreak than had been widely expected. In early July, Amadeus Asia reported that daily bookings had reached levels of the same time last year.

One of the features of the post-September 11 aviation markets has been how rapidly airlines responded to collapsing demand by cutting capacity. As a consequence, load factors have remained strong - this summer, transatlantic passenger load factors look to be 2-3 points higher than in 2001, while traffic is 10-15% lower.

Translating these load factors into higher yields is the huge problem. Bubble era yields will never come back, but at present there would seem to some opportunity to push up back-end yields, if only because planes are being filled by full-fare Economy passengers being upgraded to Business and full-fare Business being elevated to First if available. Then the airlines will have to restore capacity to make long-haul flying a less painful experience, and hopefully create a virtuous demand circle.



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Talks are due to begin in September on the European Community proposal to create an EU-US "Open Access Area", whereby any airline established in either the EU or US would have equal, open access to any aviation market within that zone, and non-discriminatory access to third country markets. The EC is proposing to abandon the historic approach by which governments regulated international airline competition and move to a framework where airlines could be organised on a multinational basis, like financial institutions and most other global service industries. By initially negotiating with the US, the EC hopes to quickly establish a large foundation that can be steadily extended to other countries and regions, where Open Access could be an especially powerful driver of competition and increased efficiency.

While some recognise a historic opportunity, others have been more cynical about the possibility of ever reforming the old system. It promises to be one of the most interesting stories in aviation in the coming year. The EC faces enormous obstacles, including the sheer audaciousness of its concept and the extent to which the current system is totally ingrained into industry-wide processes and thinking.

In this review we will discuss Open Access in the context of the major economic constraints within today's framework, and the alternative paths to structural reform under discussion. It is unclear whether the EC and other supporters of Open Access fully appreciate the enormous challenge of uprooting long-standing practices and moving global aviation to a totally new approach. In particular, there are issues as to whether the EC can

- Demonstrate that the new framework can fully meet all of today's safety, consumer and other legal requirements and deny defenders of the status quo the opportunity to block reform by raising a wide range of doubts and concerns;

- Offer solutions for today's outstanding market entry and competition problems and for the ongoing issues of slots and future competition at capacity-constrained airports, so clearly establishing the pro-consumer objectives of Open Access;

- Keep the upcoming negotiating process focused on the possibility of reaching a breakthrough agreement on long-term structural reform, and prevent competing short-term claims from airlines and other vested interests from dominating or subverting the basic reform agenda.

The November 2002 European Court of Justice decision that invalidated bilateral provisions inconsistent with the Treaty of Rome left a number of aviation jurisdictional issues unresolved. However, we are assuming that these intra-European matters are being, or will be, sorted out, and the Europeans will be in a position to negotiate a major new treaty with the US and other third countries that will be binding on all the Member States.

The Gordian Knot

Every commercial airline in the world has been rigidly tied to a single, specific nationality since the earliest days of the industry. The US Aviation Act of 1938 established the 75% US citizen rule for ownership and control of US airlines that remains in force today. The Chicago Convention of 1944 established national accountability for safety, specifically sanctioned the state role in limiting and managing competition, and enshrined the fundamental right of every state to prohibit foreign carriers from entering their domestic market. The airline/nationality link was extended across the globe by the ownership provisions of original US-UK Bermuda 1 treaty and the thousands of subsequent Air Services Agreements modelled

after it.

Every airline must meet three tests of nationality. It must receive an Airline Operators Certificate and be subject to the safety oversight of a specific government, it must have its principal place of business and be subject to the commercial law (pertaining to finances and contracts with customers, and many other matters) of the same government that issues the AOC, and controlling ownership is limited to citizens of that nation. This in effect prohibits mergers across national borders, and makes any commingling of operations or marketing with airlines of other nations extremely difficult.

The airline/nationality link is now a Gordian Knot, extending far beyond the regulatory control of safety oversight that was the key objective of the Chicago Convention. Ownership and control provisions limit access to capital. Consumer protection and accident liability laws all rely on this strict national framework, so that CRS codes and other airline branding devices are as rigidly tied to nationality as the regulation of aircraft maintenance programs. Under Bermuda-type ASAs airlines can only operate international routes when governments have granted and traded reciprocal "rights" of market entry, and every country has the right to block any airline not meeting these three nationality tests. This not only gives governments considerable scope to limit airline competition, but also creates leverage that can be used to further other diplomatic objectives.

All past efforts to reduce government interference in airline markets (including deregulation and privatisation) were strictly within the traditional "national airline" framework, which remains as rigid as ever. Countries have always had the ability to pool nationalities, as Sweden, Norway and Denmark did in 1951, but this requires the specific agreement of every trading partner, and the pooled nationality still functions within the traditional system. Airlines from different countries cannot freely integrate marketing or operating assets, as companies in most other industries can, unless (like SAS) their governments have implemented worldwide agreements that recognise pooled nationality.

Market access under the Open Skies policy advocated by the US Government is strictly limited to "national airlines" as defined under

the Bermuda framework. Under tightly controlled conditions airlines can use codesharing to sell other airlines' services, but only when the marketing carriers have the underlying right to operate the route; since alliances have no nationality, they are forbidden from directly selling services or controlling operating assets.

Two approaches to aviation reform

It is important to emphasise that the EC has explicitly rejected proposals to achieve incremental gains under the old framework, and is attempting to undermine, and eventually replace the old system. Open Access is much more than Open Skies, and it is much more than an attempt to pool the nationality of the 15 Member States into a single aeropolitical entity called "Europe". The US Government has clearly indicated its willingness to replace its 15 separate, somewhat inconsistent Air Services Agreements with a unified Open-Skies ASA, and these changes could have been easily implemented under the current system. Equally clearly, the EU has indicated that such an approach fell far short of what it was trying to achieve.

Two basic approaches to aviation reform are possible (see table, page 4). The first approach attempts to weaken the Ownership and Control (O&C) bilateral provisions to facilitate cross-border investment while protecting both safety oversight and traditional commercial and aeropolitical jurisdiction of national governments. Extensive work has been done by a range of organisations on exactly how more liberal ownership could be achieved without unravelling the Gordian Knot and compromising other elements of aviation's legal framework. IATA has done extensive work with its members on the merits of delinking ownership and regulatory oversight. Initiatives such as the APEC multilateral open skies negotiations, the OECD Cargo Open Skies initiative and ICAO Air Transport Regulation Panel (see note 2) have explored specific options for amending ASAs, such as linking airline nationality to its

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Aviation Strategy

Analysis

	Historic Framework	Liberalised Ownership and Control	Aviation Free Trade
Airline Nationality	3 criteria: (AOC/effective safety oversight, Principle Place of Business/effective commercial jurisdiction, citizenship of controlling shareholders)	reduced to 2 criteria: (AOC/effective safety oversight, Principle Place of Business/effective commercial jurisdiction)	reduced to 1 criteria: (AOC/effective safety oversight)
Access to Capital	Only own nationals can invest	Investment restrictions lifted	Investment restrictions lifted
Commercial Entity	Same entity/nationality as AOC holder	Same entity/nationality as AOC holder	Commercial restrictions lifted
Cross-Border Marketing integration/flexibility	No cross-border integration of marketing or operations	Limited cross-border marketing possible but not deep integration or common branding	Extensive cross-border marketing possible including common branding
Cross-Border mergers	No Cross-border mergers	Common ownership possible across borders, but brands, management strictly separate	Cross-border mergers possible as long as operating units strictly tied to AOCs/safety regulators
Aeropolitical barriers to entry and competition	Entry only when governments agree on reciprocal rights No access to foreign domestic markets	Entry only when governments agree on reciprocal rights No access to foreign domestic markets	All artificial entry limits eliminated All discrimination based on nationality lifted

"principal place of business" or where "effective regulatory control" exists, while eliminating references to the citizenship of its shareholders. The European Union has clearly taken note of these approaches (and even simpler ones, such as "permanent presence"). Provisions to prevent airlines from establishing "flags of convenience" or exploiting other loopholes to "free-ride" off of other third-country airlines' rights have also been proposed.

Ownership and control liberalisation creates the possibility of increased foreign investment and even foreign ownership but does not really break the core airline/nationality link and would not facilitate cross-border marketing integration, much less a true multi-national carrier. An airline based in the US and under effective regulatory control of the US Government could be owned by Germans or Singaporeans under fully liberalised O&C, but it could not combine its operations or marketing with airlines under the regulatory control of Germany or Singapore. It would be subject to the exact same legal and economic constraints as today's US airlines. The EC has not even broken this airline/nationality barrier within Europe. Virgin Express maintained separate operations under separate Irish and Belgian AOCs several years ago, but was strictly prohibited from co-mingling operations in order to protect clear lines of safety regulation. Lufthansa is permitted to take a controlling shareholding in Air Dolomiti, but operations,

branding, commercial activities and financial responsibilities must remain distinctly Italian. Air Dolomiti can use the LH-designator, but only on the same restricted terms as United or Air New Zealand. Lufthansa could integrate Air Dolomiti operations and branding with Lufthansa Cityline if it shifts operations to a German AOC and the higher costs of German legal requirements, or retain the Italian AOC and the higher cost of duplicate infrastructure.

The alternative "free trade" approach breaks the Gordian knot by separating national responsibility for operational licensing and safety oversight from any definition of commercial nationality, and prohibiting market discrimination based on any notion of nationality. This would allow airlines to separate their core operating/technical functions (which would remain tied to the national AOC) from other marketing and service functions, which could be organised across borders, or in other innovative ways. Alliances currently have no ability to obtain route rights or sell tickets since they are not "airlines" and do not have any nationality. With the denationalisation of commercial activities, Lufthansa would be free to organise and market Air Dolomiti and Cityline (and for that matter the Star Alliance) in any way it saw fit and would allow people to rethink the basic question of "what is an airline?"

Airlines would gain the same marketing flexibility as multi-national banks that can adapt global brands, retain historic national

brands, or use multiple product line brands, without petitioning dozens of governments for regulatory approval. Under the "free trade" approach, airlines would still be fully subject to normal consumer protection and other commercial laws, just like software and soft drinks companies. Airlines with sales or airport staff in any given country would be subject to all local labour laws and social requirements. Governments would continue to play a key role in areas like airport capacity and competition law but they would lose the ability to distort markets by explicitly discriminating between airlines on the basis of nationality.

Aviation reform under Open Access - how far, how fast, which path?

The EU clearly aims to achieve a major breakthrough that would facilitate cross-border integration and mergers. Public statements emphasise the need to destroy "long embedded commercial restrictions and archaic ownership rules so that investment may flow freely and airlines can create truly international businesses" and the specific goals of facilitating "mergers between European airlines from different countries and between US and European airlines" and the overall "consolidation of the industry". EU statements claim that the initial establishment of the EU/US Open Access Area would "produce a more competitive market than today generating a greater choice of services and lower airfares" and "direct consumer benefits of at least €5bn a year and would boost airline/nationality employment on both sides of the Atlantic". (see note 1)

These statements would not be consistent with simple ownership and control liberalisation and the EC appears anxious to eliminate the type of barriers to operating and marketing efficiency that Virgin Express and Lufthansa/Air Dolomiti face. This more ambitious approach is a logical extension of the free trade objectives of the Treaty of Rome to international aviation. The Treaty clearly envisions a multinational economic space, where companies have the right of establishment and are free from discrimination based on nationality.

Under this concept, national governments must abandon their historic role "designating" and protecting national companies and negotiating with other national governments for "reciprocal" trading "rights".

It is not yet clear whether the EC's mandate recognises the worldwide scope of changes needed to fully establish a free trade-type regime or the long-term negotiating and implementation challenges of this ambitious approach. An initial agreement covering the EU/US zone would be largely symbolic in many ways; no large international carrier will be able to even entertain ideas about seriously integrating operations or marketing across borders until Open Access agreements cover a significant portion of the global market. Until that time, carriers will avoid any move that could undermine their old national identity and the route rights to countries like Japan and Russia that are linked to it. Yet claimed benefits of the EC proposal focus narrowly on the EU/US zone and there has been little discussion of how aviation discussions with less liberal third countries might be aligned with the major changes envisioned for the US talks, or the multi-year diplomatic effort that will be needed extend Open Access more widely.

Since safety and a wide range of other laws are involved, it will be critical to work out exactly how a new free trade framework would work in practice. These are certainly not insurmountable challenges, but it is not sufficient to merely suggest that solutions are possible. Any vested interest or entrenched bureaucrat wishing to block reform need merely suggest that safety accountability could be confused or compromised. If Europeans are not yet satisfied that there is a framework that would permit Virgin Express complete cross-border flexibility under multiple AOCs, then Americans and others have a right to demand stronger evidence. Alternative approaches must be worked through in considerable detail, with active consultation and discussion with a wide range of airlines, unions and other interested parties.

The commercial issues represent relatively uncharted territory and may actually be trickier to solve. Swissair, Sabena and Austrian considered using a common two-letter CRS code several years ago as a means of marketing their Qualifyer Alliance. The US Government

had no bilateral, competitive or safety concerns, but objected to the concept on the grounds a multi-national identifier could obscure critical information (what nation is providing safety oversight?) and confuse consumer rights (what law applies if there is a dispute?). Obviously, hundreds of other industries have found solutions to these problems and efficiently market on a multi-national basis, but this illustrates the depth of the traditional airline/nationality mindset. The EC must be in a position to answer all possible legal objections in situations far more complex than the Qualiflyer case, including true multi-national mergers, and recognise that many governments could use these types of claims of legal uncertainty to protect incumbents and block new competition.

Market entry and competition issues

The EC expects Open Access to directly spur expanded service and increased competition (it forecasts 17m incremental passenger trips annually), although the specific changes to existing constraints that might stimulate new entry and traffic growth have not been described in detail. Today's major US-EU competition problems centre on airports with serious physical capacity constraints, and transatlantic service to London, where historical bilaterals have seriously distorted competition and artificially blocked entry.

The EC explicitly acknowledges a government role in airline markets where physical capacity constraints can limit the efficacy of "free" competition. "The Open Aviation Area will have to offer all community carriers equivalent opportunities as regards access to traffic. The ability of the principal Community airports to accommodate new service is, in this regard, decisive. If problems of airport capacity were to hinder the opening of new transatlantic services for community companies, the Commission would examine the situation, take the appropriate measures, and make ... proposals to the Council and the European Parliament to allow fair market access...to be restored" (see note 3). It is not yet clear how policy statements such as this will translate

into concrete market rules, but given the degree of capacity constraints across Europe, it will be impossible to judge the potential impact of an Open Aviation Area on competition and consumers without a detailed consideration of specific proposals, including clear rules on slot distribution and "ownership".

Under current EC rules, airlines have an absolute right to continued use of historic slots at no cost, but cannot be paid to trade or relinquish them, and have no rights if they stop using them. These rules have been challenged by UK court decisions upholding grey market trades of slots for money, and by recent market interventions to extend grandfather right to slots unused during the current market downturn. Under an Open Aviation Area, the EC could reaffirm and more strictly enforce the traditional IATA-administered rules, or adapt a wide range of alternate rules. These include granting historic users full slot ownership rights (including the right to buy or sell at open-market rates), granting airports or governments all slot ownership rights with proceeds earmarked for capacity expansion, and various forms of narrower, targeted interventions to support new entrants or other perceived needs (see note 4).

Every one of these alternatives will create a "bias" in favour of some competitors and against others. The status quo places new entrants (who have no access to slot trades and can not buy slots) at a clear disadvantage but may limit the ability of dominant carriers to aggressively acquire slots in the hopes of reinforcing that dominance. More open, transparent slot exchange markets can accelerate the shift slots from weaker to stronger uses but can also create serious speculative distortions during the initial transition to a new system. Several approaches can create disincentives to needed capacity expansion. This is an exceedingly complex issue; there is no obvious solution that will enhance competition without putting some existing economic interests at risk, and there is always the danger that interventions to maximise consumer interests could adversely affect industry efficiency.

It will be difficult to negotiate major breakthroughs in the name of enhanced US-EU competition without clearly addressing its impact on transatlantic service at London

Heathrow, the market widely regarded as the furthest from anyone's ideal of competitive efficiency. At every other large transatlantic gateway EU-flag service is totally integrated into a large, comprehensive hub network, and a range of US carriers offer service from their respective hubs. At Heathrow, UK-flag service is much more fragmented, most US hub carriers are prohibited from serving the market, and US flag routes have been largely frozen in place since the 707 era. Deliberate government intervention designed to help specific incumbent airlines has hurt consumers and reduced overall industry efficiency. Historical distortions in other EU transatlantic markets have been resolved by a combination of Open Skies and new entry. US attempts over the past decade to replace the Bermuda 2 treaty have been firmly rebuffed by the UK, and the lack of capacity at Heathrow would preclude new entry in any event. It will be difficult to take the EC's professed interest in consumer benefits from expanded competition seriously if the new US-EU Open Aviation Area fails to find the best possible solution for consumers at Heathrow. Unfortunately, the problems facing any solution to the slot issues also apply to Bermuda 2: it is very complex, there are powerful entrenched positions, absolutely any solution will damage some legitimate (consumer or airline) interests, and things can get worse during the transition to any new system.

Cabotage - finally time to attack the sacred cow?

The elimination of cabotage and discriminatory access to US Government and military contracts (such as Fly America and the Civilian Reserve Air Fleet (CRAF)) is a critical element of the EC proposal. Free trade within an Open Access area requires the freedom for any airline to enter any market on equal terms and that governments do nothing to limit market access or competition based on traditional definitions of ownership or nationality. There are different ways that the legal framework supporting this could be arranged, but under any scenario all airlines operating US domestic service would be subject to the same commer-

cial and labour laws as any other domestic US operator. The US Government and military could set specific requirements for airline participation in these programs (such as the aircraft availability and cargo payload requirements of CRAF, or security clearance requirements) but could not discriminate among airlines that met those requirements solely on the basis of the nationality of the airline shareholders. Most of the ships requisitioned by the US military during the Iraq War, under the marine equivalent of CRAF, were from shipping lines owned by foreign citizens.

The EC proposal is fully consistent with its larger goals of destroying all remaining protectionist aspects of the Bermuda framework and moving to a system where airlines work across national borders in the same way that most other industries do. However, both US cabotage and government discrimination have organised, vocal support, and past attempts to raise the issue in negotiations (including recent US-UK Open Skies talks) have failed on political grounds.

Estimating the benefits of Open Access

Quantifying the economic impacts of changing basic elements of an industry's structure is a thankless task. The EC's Open Access proposal would radically alter aeropolitical constraints that are over half a century old, but aeropolitical constraints are only one of many factors influencing the structure of the industry. It is difficult for anyone in aviation to grasp the opportunities those changes might create, and it is very difficult to isolate the value of those aeropolitical changes from the dozens of other variables that drive industry competition and profitability. There is a fundamental difference between long-term benefits (huge potential, but hard to identify, much less quantify, with any precision) and short-term benefits (smaller, but easy to document using concrete examples). Open Access has been explicitly designed as new model for global aviation. Any initial US-EU agreement would be a pilot program, not an end in itself, and it is likely that initial US-EU impacts could be tiny compared to

what might be possible if the approach worked globally.

Nonetheless, the EC commissioned The Brattle Group to estimate the economic value of Open Access, and their study (see note 6) developed the €5bn estimate of direct consumer benefits cited earlier and widely quoted by Open Access supporters. All of Brattle's forecasts are for near-term impacts in the EU-US zone, and do not assume any extension of Open Access beyond that zone. Brattle claims that the major benefit of Open Access (€3bn) would result from massive productivity gains as more efficient carriers pushed weaker ones out of the market and carriers adapted more efficient procedures in order to compete. Brattle focuses narrowly on quantifying its hypothetical productivity burst, but provides little explanation or evidence to explain why Open Access would be directly responsible for creating it. It suggests that European airlines will take much greater advantage of scale economies without providing examples of these unexploited opportunities or attempting to explain why airlines do not exploit them today. Brattle claims additional benefits (€0.6-1.5bn) from extending Open Skies to the UK, Ireland, Spain and Greece, with (as would be expected) almost all of the benefits occurring in the US-UK market. US Government negotiators might plausibly claim that they have trying to achieve these gains for the past decade, and any linkage with Open Aviation is artificial. It also fails to explain how the Heathrow capacity problem would be solved.

Brattle also claims the potential for increased pricing synergies on the North Atlantic (€0.6-1.3bn). The specific changes that drive these improvements are not explained, and it is not clear where new pricing synergies of this magnitude might come from. As with the Open Skies benefits, Brattle seems to believe that Open Access would create a second wave of benefits similar to those observed when the immunised alliances and Open Skies were first introduced across Europe. It is much more likely that the carriers participating in the first wave captured the predominant share of potential benefits from these innovations, and any future gains would be much, much smaller. Brattle further assumes that all of these gains would flow to consumers

in the form of increased service and lower prices, instead of flowing to labour or shareholders. The type of short/medium term changes that Brattle predicts have been observed in the past, but only when the industry had significant under-utilised capacity, major constraints to short-term pricing or route access were lifted, or when new airlines with significantly lower costs initially enter and establish viable positions. None of these conditions are present today.

The EC's public relations offensive relies heavily on the sales pitch that (to paraphrase) "Open Access will drive overdue industry restructuring and a productivity boom, resulting in a consumer cornucopia of increased service and lower prices". It seems unlikely that the politicians and airline executives that have been quoting Brattle's €5bn benefit estimate have actually read the study carefully or could explain the logic behind the estimates. Open Access will be debated in a political arena, the EC must work with a complex set of constituents and the attraction of a simple, sexy sales pitch is understandable. Unfortunately, it will not be difficult for defenders of the status quo to challenge these claims and thus the basic credibility of Open Access, and put the EC back on the defensive.

Open Access and industry restructuring

Open Access is widely heralded as the change that could trigger an industry shakeout. The *Financial Times* quoted EC officials as saying this "much needed consolidation...of the fragmented European aviation industry...could happen in months rather than years" and that the (Open Aviation) agreement would "pave the way for the creation of pan-European carriers...improv(ing) the dire state of profitability among the leading airlines" (note 5) Claims for industry restructuring of this sort, a short term phenomenon, must be distinguished from potential long-term changes that might occur under Open Access, such as efficiencies from totally new ways to organise traditional airline functions. The end of the strict airline/nationality link will facilitate changes that

cannot be foreseen today, but these payoffs are down the line.

The claimed near-term industry restructuring benefits only make sense if there was a clear-cut, well-documented efficiency gap between specific large European airlines today and what they could achieve after merger or some other defined restructuring. This evidence has never been provided by European consolidation advocates, and there is enormous evidence that the economics of consolidation via merger would be largely negative. More implausibly, the claim assumes that many intra-European mergers would have been profitably pursued except for identifiable aeropolitical barriers that Open Access would specifically remove.

The European airline industry is fragmented because markets are fragmented, and the growth of the low-cost sector has increased this fragmentation. Except for narrow categories of intercontinental connect traffic there are no meaningful scale economies when local networks consolidate. European carriers have problems with overcapacity, productivity and balance sheets, but these can be addressed by reducing capacity, reducing costs and financial measures. Mergers would make each of these problems worse. The large North American airlines in the worst financial shape were the ones that recently merged (AA, AC) or the ones that spent years attempting to (UA, US), and no sensible observers have seen mergers as a solution to the current US industry crisis. Swissair's core airline was viable but the company failed after multiple attempts at cross-border investment (SN, TP, OS, IW, PE, FU) failed to produce any meaningful synergies, and KLM walked away from its long planned combination with Alitalia. There are obstacles to the "free flow of capital" when one compares the internal European aviation market to the internal American market, but the main issues are labour immobility and poorly developed bankruptcy processes and not aeropolitical constraints within the EU-US zone. Global abandonment of the old link between nationality and traffic rights would create many new opportunities, but again, this will have no bearing on industry changes in the next two years.

There is a fundamental contradiction

between these industry consolidation arguments, and the increased service/consumer welfare arguments cited earlier. Open Access cannot simultaneously stimulate massive new entry and competition that drives down prices and generates 17m incremental passenger trips annually, while also driving pan-European mergers and an industry shakeout. Industry consolidation might enhance productivity and profitability (as with the US shakeout of the early 90s) or leave the industry much worse off (as with the US mergers of the late 90s) but they will not directly stimulate new entry or lower fares in either case. In today's environment they would strictly be a means to eliminate excess capacity, and would reduce consumer options and price competition.

While consolidation advocates emphasise that European aviation is "fragmented", there is no evidence whatsoever that mergers would address the problems of Europe's many small and mid-size carriers (TAP, Finnair, Olympic, Austrian, SN Brussels, etc). The scale of these companies reflects the local markets they serve, and investors have not shown any interest, although there would be few obstacles to any proposed acquisitions. Neither Swiss nor SN Brussels, despite ongoing efforts, have found a buyer willing to pay more than token amounts for their large networks and market positions. The proposed Lufthansa investment in Swiss is predicated on a major Swiss downsizing that would eliminate capacity directly competitive with Frankfurt and Munich.

Consolidation advocates appear much more interested in mergers between Europe's largest, intercontinental-focused carriers where fragmentation is clearly not an issue. Three years ago there were six large competitors on the North Atlantic (three alliances plus BA, AA and CO) and several serious mid-sized carriers (AZ, US, IB, SK). Subsequent combinations plus the proposed BA-KLM merger would have left only three plausible transatlantic competitors. There might be a valid business case for any specific merger but it is totally absurd to argue that Open Access is a wonderful opportunity for consolidating the North Atlantic down to three players while also claiming that Open Access will rapidly generate €5bn in consumer benefits through expanded service and increased price competition. A

merger between any of Europe's large long-haul airlines would face huge complications due to route rights to illiberal countries outside the EU/US zone. If Open Access succeeds in this zone and then spreads widely, mergers of global networks might become feasible but it is absurd to suggest this type of consolidation would occur anytime soon.

Can the EU and the US find common ground?

The negotiations on Open Access represent a fundamental fork in the road for global aviation: should the industry remain resigned to the Bermuda world of strict airline/nationality links for the coming decades, or should the EU and US take the leadership role in destroying that link, and moving aviation to a multi-national framework similar to most other industries? The negotiating burden will fall almost exclusively on the European side. The US has little of immediate economic importance on the table in this negotiation, and no political risk if talks fail. Vested interests do not have to defend the status quo, but can block reform by emphasizing risks and logical inconsistencies with the EC's radical new concept.

As the process begins, it is important to understand that the US remains totally committed to the statutory 75% ownership and control rule for US airlines, and that there is no strong US political force demanding change. It will take enormous political effort to change the laws establishing those requirements, and to counter the political constituencies behind cabotage, Fly America, CRAF and other forms of discrimination. US officials would likely understand that Open Access offered limited near-term financial benefits for US consumers.

US airlines would not expect any material impact on the current industry financial crisis, and are not focused on any potential gains from longer-term reform. US airlines have ample access to capital, and can achieve very high degrees of competition and efficiency within the old system. Efficient workarounds (such as alliances) can be found for most cross-border issues. Europe will need to convince the US Government to voluntarily

change a system where it has the natural advantages of both the largest market and enormous political might. DOT and the State Department clearly value the basic right to intervene in international airline markets in order to block abuse or to further important national policies.

One possible key to a breakthrough would be to convince Washington that its current approach to aviation liberalisation (trying to get illiberal nations to agree to Open Skies) had passed the point of diminishing returns, and that Open Access was truly the best way to move the global industry forward in the coming decades. Washington is unlikely to accept Open Access as the new basis for liberal aviation reform until the EC puts its long-range, cross-border, free-trade objectives forward in a much more compelling manner, and demonstrates an absolute commitment to pro-consumer, free market issues in other areas. As a practical matter, this will require a package that develops pro-consumer Open-Skies compatible solutions for all the outstanding marketplace issues (Heathrow, Fedex/UPS/DHL, slot exchanges) on the table.

By emphasising the short-term consumer cornucopia and pan-European merger arguments, the EC has caused some observers to totally misunderstand the real objectives, and others to wonder whether those intentions might be compromised by other interests. Washington has clear memories of the UK government's simultaneous dedication to free market ideals and the crude protectionism of Bermuda 2. Despite sympathies with open entry, reduced government interference, freer flows of capital, enhanced productivity and lower airfares, US negotiators are not very likely to invest political capital on a plan that would immediately reduce competition on the North Atlantic and permanently lock in Bermuda 2 distortions at Heathrow.

Europe must convince Washington to take two steps back from its longstanding focus on reciprocal "rights" and quid pro quos, and get Washington to agree to the central objective of a reduced government role and eliminating the very concepts of reciprocal "rights" and quid pro quos. Washington assumes that the UK raised cabotage in Open Skies talks knowing it was politically untouchable, and thus a sure-fire way

to sabotage meaningful competitive improvements the US was seeking. If Washington continues to look at things this way, Europe's renewed demand for cabotage will be taken as either insincere or foolish, since Europe could not possibly offer any reciprocal benefits equivalent to opening up the US market, and golly, who would want to invest in US airlines these days anyway?

Again, old aeropolitical habits die hard, but if the EC can make its central case more clearly, Washington may recognise a unique opportunity. There may be different ways to put the package together in light of the political concerns, but if you agree the primary objective is to (eventually) destroy the old system, you would quickly recognise the (eventual) need to destroy cabotage as well.

If the EC can convert Washington to the core objective of destroying the strict airline/nationality link, the challenge then becomes to develop detailed solutions for how the new framework would meet the needs of rigorous safety oversight, consumer protection, accident liability, collective bargaining rights and the myriad other aviation legal issues that would be reopened once the Gordian Knot is cut.

It must be demonstrated that governments can relinquish the right to refuse airline operating rights on strict ownership/nationality grounds without losing the leverage needed to drive other important policy objectives. It is not sufficient to suggest that solutions to these challenges could be found, the EC and the US Government must be in a position where they can demonstrate that solutions have been found. Only at that point can the debate be shifted from the danger of safety (or other legal) risks to the desirability of moving away from an

archaic system. Only at that point can the burden of proof be shifted to the vested interests fighting to maintain the status quo. While individual carriers or unions or military procurement officers may have a clear preference for the current framework, those preferences should not determine the basic structure of global airline competition.

A successful negotiation will mean either that the EU and US agree on a framework for abandoning Bermuda and supporting multinational and other innovative airline structures or the EU and US agree that, no matter how well-intentioned, Open Access just won't work, and reform will need to follow a totally different path. In either case, the path to success will be slow and difficult. Failure could occur much more quickly, as the negotiators could simply talk past each other, and fail to understand or deal with the central issues. As always, the process could be co-opted by narrow interests attempting to manipulate short-term economic issues at the expense of the larger reform agenda. There will be considerable pressure to achieve some "quick harvests" of intermediate agreements, and simultaneous pressure to focus strictly on the "big bang" of a comprehensive breakthrough.

Elected leaders on both sides will be looking for the former but intermediate steps could reduce the US appetite for larger changes, and the US is highly unlikely agree to anything major that was stated in vague, general terms. Participants advocating the "big bang" could have a sensible focus on the most important objectives or could be hoping that over-complexity leads to collapse and preserves the status quo. Nothing important is ever simple.

note 1 -Loyola de Palacio, "Troubled airlines need open skies", Financial Times 29 June 2003

note 2 -Alan Mendelsohn's article "The US, the European Union and the Ownership and Control of Airlines" Issues in Aviation Law and Policy, March 2003, March provides a much fuller discussion of O&C issues than is possible here

note 3 -DG C III, Draft Council decision authorizing the Commission to open negotiations with the US in the field of air transport, Brussels 28 May 2003

note 4 -"A Market in Airport Slots", a recent paper by the UK Institute of Economic Affairs discusses the pro and cons of many of these alternatives, noting the differing views about underlying property rights in slots and with particular reference to the funding of capacity expansion

note 5 - Financial Times, 13 June 2003

note 6 -The Economic Impact of an EU-US Open Aviation Area, December 2002; this includes appendices that usefully summarise EU responses to US concerns about labour and national security issues. The study is available at http://www.brattle.com/_documents/Publications/ArticleReport2198.pdf

Lufthansa: too bullish on LCC threat?

In June Jurgen Weber handed over control of Lufthansa to the new CEO Wolfgang Mayrhuber. Weber had successfully transformed Germany's old flag-carrier dinosaur into one of Europe's foremost European network carriers and left his successor with a company that has one of the best balance sheets in the industry (at the end of 2002 the Group had net debt of about €1.75bn against equity of €4bn, by far the best ratio among the Euro-majors).

However, in May, Lufthansa announced its first quarter results, one of its worst ever - net losses of €356m against losses of €186m in the prior year period; revenues down by 4.6% to €3.7bn; and operating losses of €415m compared with an operating profit in the same period last year of €12m. And now Lufthansa may be facing a major threat - the resurgence of the LCCs in its home market.

In a recent report Andrew Lobbenberg of ABN AMRO graphically represented the flag carrier's reactions to the LCC threat in four segments. He saw only BA and Aer Lingus - incidentally the ones who have had the

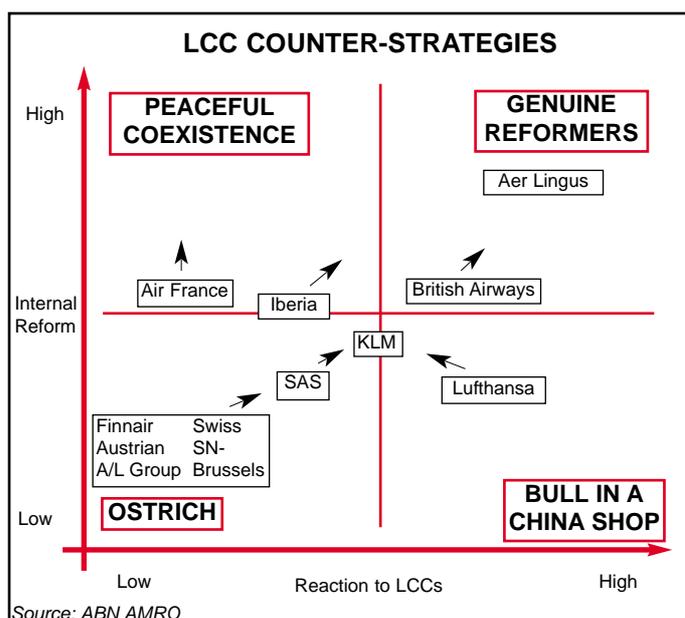
longest and worst exposure to the LCCs so far - as "genuine reformers": those who are really attacking their short-haul unit costs and marketing strategies to allow them to compete and survive against the LCC threat. (British Airways' strategy is highlighted in the March issue of *Aviation Strategy*).

Those described as carrying on in "peaceful coexistence" - Air France and Iberia - were defined as doing something to lower their costs but not unduly worried by incursion by LCCs on the basis that they were happy to concentrate on their metiers of network operation. Air France has in any case had fairly tough low price competition in its domestic market provided by the TGV. It has also sewn up the domestic market through its regional acquisitions and is resisting easyJet's Paris hub plans by retaining 53% of the slots at Orly following Air Lib's demise, while easyJet has been allocated a mere 4%. Iberia, based in Europe's major short-haul leisure destination has always had to face low cost opposition from the charters, and has largely conceded this large segment of the market to them and now to the LCCs.

The bull in the china shop is the carrier that reacts very strongly to the introduction of LCC competition, but is doing nothing effective about it. Here we find Lufthansa.

When Ryanair started its operations into Frankfurt Hahn two years ago, Lufthansa resorted to legal action to stop the carrier from calling Hahn a Frankfurt airport, gaining a court injunction against it. At the same time it started a short term experiment of head-to-head competition into London Stansted. Both actions failed miserably: there is nothing more welcome to a new entrant than to have widespread publicity generated by its major incumbent competitor showing how low its prices can be.

Recently, Lufthansa countered this criticism and seems to be putting itself on the lines of peaceful coexistence. Mayrhuber has



stated that Lufthansa will remain focused on its network hub operations and saw no reason to compete head to head with the start-ups. "We have looked," he said, "at low cost operations but we still believe we should not go there.... it is simply an analytical response about where we should spend our money."

Mayrhuber commented that Germany is not a low fares' market - and besides that, through Germanwings, operating nine A319/320s, it had an effective weapon for the LCC market in Germany.

Fundamentally, the German domestic market is indeed unique in Europe. The German federal system is an extension of the mediaeval city state structure that in fact was only unified in the 19th Century - and the population distribution throughout the laender still follow this ancient system of loyalties. There are indeed areas of major population - with the highest density in the north west - but generally speaking there is a large number of moderate population centres. As a result the domestic air route structure is decentralised.

Almost because Lufthansa is concentrating on its position as a network hub operator, it has to concentrate its short-haul services into and out of its hubs at Frankfurt and Munich. Any services between cities outside these are in effect disconnected from its main operation and will be treated as part of its regional operations. This in itself gives rise to the opportunity for LCCs to enter the market. And they have: Hapag-Lloyd Express in Koln, Germania Express in Berlin and the redefined DBA at Munich.

The big question - and Lufthansa's threat - is not whether there are domestic competitors in this segment. It is rather whether the Anglo-Irish LCCs can effectively import their own low employment costs (which is one of their major operating benefits) into Germany, which suffers from some of the higher indirect costs of employment in Europe. In that sense Lufthansa is right: Germany is not a low cost market. In another it is not: the airline industry is one where foreign competitors can upset domestic competitive positions.

Lufthansa appears to have not really worked out how to compete with the likes of Ryanair. One of the major elements of the LCC model is pricing transparency, the sim-

EUROPEAN LCC CAPACITY & FIRST QUARTER 2003 FARE CHANGES

	Share of European LCC capacity	Change in European leisure fares	Change in European full Economy fares
UK	36%	-10%	-4%
Germany	19%	-4%	-20%
Spain	11%	-9%	1%
Italy	8%	-5%	-2%
France	5%	-7%	2%
Ireland	4%	-23%	-27%
Belgium	3%	-8%	-4%
Netherlands	4%	5%	1%
Norway	3%	-6%	-4%
Switzerland	2%	6%	-5%

Note: LCCs include Air Berlin, bmibaby, easyJet, flybe, Germania, Germanwings, Jetmagic, Mytravellite, Norwegian, Ryanair, Virgin Express, Volare. Hapag Lloyd Express schedule data not available through OAG. Source: ABN AMRO, OAG, Amex

plicity of the pricing model and the ease of internet booking. BA has made enormous progress with its new booking engine, but Lufthansa still provides the old system - "tell me when you want to go and where to and I will try to sell you the highest price ticket". As a snapshot example, an attempt to get a flight from Frankfurt to Rome on Ryanair and Lufthansa respectively for a week ahead gave €80 return on Ryanair and over €1,000 on Lufthansa - while searching through other out-of-house booking engines gave a price of €400 for the same flight on Lufthansa.

Outlook

Lufthansa is in a strong financial state at the worst time of the cycle. Its expansionist strategy up to now has worked well in its favour - but it is now time (as BA did three years ago) to start evaluating what its future strategy really should be. Mayrhuber is in charge of a new project - "Future development of continental traffic" - which is designed, as the company puts it, "to safeguard and further improve the competitiveness of the network carrier Lufthansa in the German and European traffic region in a changed market environment". It takes time to turn super-tanker - this project is expected to last two years.

Parked aircraft: Lots of potential bargains

There are still plenty of readily available, modern, relatively cheap jets in storage for those many entrepreneurs who are considering an airline start-up.

The table below just shows those under 15 years old that are currently parked. These are the only aircraft that will definitely return to airline service at some point, and they represent under 25% of the apparent total surplus (for a discussion of global supply/demand see *Aviation Strategy*, April 2003).

While there is a great deal of interest in the narrowbodies, no one as yet has presented a viable plan to exploit the widebod-

ies, especially the 747s, though there are several in the works. The 100-seaters - BAe 146s and F100s - languish despite very low lease rates.

The operator list is dominated by the US majors, bankrupts like Ansett and Air Lib, and all the leading leasing companies, which not only have parked aircraft but also other flying but not paying assets. A serious shake-out of this sector is inevitable, although the lessors' owners - the banks which misguidedly bought them up in the late 90s - may have to continue to bail out their subsidiaries out for some time in order to avoid totally distressed prices.

	MODERN PARKED AIRCRAFT															TOTAL						
	747	767	777	A300	A310	A330	A340	MD11	Wide- bodies	717	737	757	A319	A320	A321		MD80/90	Narrow- bodies	146	F100	100- seaters	RJs
US Airways									0	6	4	1					11	25	25	0	36	
Boeing CC							9	1	10	11	2					10	23		0	0	33	
United	18		1						19	5	8						13		0	0	32	
American				3					3							6	6	18	18	0	27	
Ansett*									0	1			5				6	12	12	0	18	
ILFC		4		1	2		2		9		3	4	1				8			0	17	
Air Lib*									0							9	9	4	4	0	13	
GECAS		2							2	9	1		1				11		0	0	13	
Ansett Worldwide				1		1			2	2	4		3		1		10		0	0	12	
TAM									0								0	11	11	0	11	
CIT Group									0		2					3	5	4	4	0	9	
Pembroke		1							1	1							1	6	6	0	8	
Airbus Finacial Services				1	5		1		7								0		0	0	7	
debis Airfinance				1					1				3			1	4	2	2	0	7	
Deltra							7		7								0		0	0	7	
SAS		4							4							3	3		0	0	7	
Bombardier									0								0		0	6	6	
Lufthansa					1	1			2			3	1				4		0	0	6	
SIA		2				4			6								0		0	0	6	
Swiss									0			1	3	1	1		6		0	0	6	
ABN Amro							5		5								0		0	0	5	
Air France						2			2				2	1			3		0	0	5	
Boeing Holding		3		2					5								0		0	0	5	
Credit Lyonnais									0				5				5		0	0	5	
Finova Capital									0		1					4	5		0	0	5	
Northwest									0		1	1	3				5		0	0	5	
Others	7	10	1	3	7	2	4	4	38	0	22	23	4	23	8	17	97	19	16	35	25	195
TOTAL	30	21	4	10	14	6	21	17	123	11	49	42	16	51	11	55	235	31	86	117	31	506

Source: ACAS, June 2003

Notes: * =Airline ceased operations; of the RJs, Others have 2x135s, 6x145s, 11xCRJ and Bombardier has 6x CRJ

Book review: “Airline Survival Kit”

Nawal Taneja argued in his previous book (“Driving Airline Business Strategies through Emerging Technology”, published in 2002) that airlines must stop going after profitless growth. “Airline Survival Kit”, however, addresses how the industry can do something about it by first analysing its cost structure, taking advantage of developments in technology as well as its own resources - namely people, property and knowledge.

Airline Survival Kit starts by identifying and exploring the complexity of the airline industry and the gravity of its current difficulties. It also discusses where airlines have been successful and criticises areas where the industry has failed to deliver, especially in relation to pricing strategies, use of very diversified fleet, complex product and inefficient use of airport facilities.

The book identifies areas of opportunity for airlines too, including the trend towards globalisation and evolving demographics patterns, evolving technologies and reshaping marketing and operating practices.

Taneja presents the major difference between the first and the second century of flight. Whereas, during the first century demand was driven by supply, in the second century supply will most likely be driven by demand. So, airline executives must produce products that the public

wants and is willing to pay for and makes a return for the airline. These are tough decisions that require reconfiguring the industry resources of management leadership, fleet, networks and so on. Unless radical changes are undertaken some airlines, both conventional and new entrants, will not survive. It is suggested that a key to successful implementation of such changes is moving from just focusing on planning to concentrating on action. It recommends that airline managers can learn so much from the experience of successful companies, not only in the airline industry but also in other industries.

The book is targeted at practitioners in the industry. It, therefore, urges the industry leaders to move away from introducing incremental changes and think radically in order to reinvent themselves and improve their lean capability at all company levels.

This is certainly a thought-provoking book. It is also very timely, given the crises that the airlines are currently facing. It does not provide all the answers but raises several key questions that need to be addressed.

“Airline Survival Kit” by Nawal K. Taneja
Publisher: Ashgate - www.ashgate.com
Reviewed for *Aviation Strategy* by
Dr. Fariba Alamdari of Cranfield University.

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JetBlue: Rationale behind the Embraer order

JetBlue Airways' recent decision to order 100-seat Embraer ERJ-190s to supplement its Airbus A320 fleet from mid-2005 surprised many in the industry. First, the airline is breaking the conventional wisdom that operating a single aircraft type in the 150-seat category is critical for the Southwest/JetBlue-style low-cost strategy. Second, it is departing from that model rather radically by opting for what is generally regarded as a regional jet.

In brief, people are wondering why JetBlue, which built its success on extremely low costs and obviously has further exciting A320 growth opportunities, is interested in smaller markets and an aircraft type that falls somewhere between commuter carriers' 70-seat RJs and larger airlines' 110-115 seat jets. Why not just continue A320 expansion?

It is worth noting that the launch order for 100 ERJ 190-100LRs and 100 options, announced on June 10, will not have any impact for two years, because first deliveries will not take place until mid-2005. JetBlue will receive only seven ERJ-190s that year, with the rest of the firm order arriving at a rate of about 18 aircraft per year through 2011.

However, there is much interest in the rationale behind JetBlue's ERJ-190 decision, because other low-cost carriers on both sides of the Atlantic are grappling with similar decisions. After faithfully following the Southwest formula, the airlines are now wondering whether a second fleet type might make sense, given the current low aircraft acquisition costs and new types of market opportunities (often resulting from larger carriers' downsizing).

JetBlue, of course, had to make sure that its employees, shareholders and the financial community understood the ERJ-190 decision, which the management team apparently supported unanimously. CEO David Neeleman and CFO John Owen went

to great lengths to explain the rationale at a conference call and at Merrill Lynch's annual transportation conference, before embarking on a national tour to meet employees.

Going for smaller markets

JetBlue is ordering a smaller aircraft type because it has spotted a good additional growth opportunity in medium-sized markets that are too small for the A320. Its analyses identified almost 900 potential markets with daily volumes of 200-500 one-way passengers that did not yet benefit from low fares. By comparison, there are 305 markets with 600-plus daily passengers - the types of routes that the A320 is best suited to.

The airline believes that many of the medium-sized markets (200-500 passengers) could be stimulated to grow to 600-plus passenger markets, but it would be too risky and expensive to go in with a high-frequency A320 operation. The ERJ-190 can provide the needed frequencies with much less risk and a lower breakeven load factor (apparently only "a little over 60 people" or 60%, compared to the A320's 119 passengers or 73%).

The ERJ-190 could also be used to develop some of the 807 smaller 50-100 passenger markets identified by the airline's analyses. For example, in the New York-Burlington (Vermont) market JetBlue has more than doubled the original daily traffic volume of 100 passengers with two flights a day (but that is still not enough to make a profit with the A320).

In addition, the second aircraft type is likely to improve synergies in the route system, particularly in the off-season, and help spread overhead costs. For example, JetBlue could fly Syracuse (NY)-Florida in the winter, connecting cities that are already served separately from JFK.

While both Southwest and JetBlue go for

underserved, over-priced markets that can be stimulated with low fares and like to rapidly build up frequencies, there are two important differences in their growth strategies. First, Southwest only wants to serve relatively large markets, while JetBlue is also interested in medium-sized and some small markets (such as those linking NYC with upstate and New England cities - routes that help it maintain local and national political support). JetBlue wants to serve "markets of all sizes across the US" (according to its press release).

Second, there is a dramatic difference in growth rates. Southwest has always grown at a very conservative pace (it took 12 years to get to 50 aircraft), whereas JetBlue will have reached 54 aircraft in less than four years (by the end of 2003) and intends to continue to grow extremely rapidly.

Bearing in mind these differences, it is easy to see that JetBlue could benefit significantly from the flexibility offered by two aircraft types of sufficiently different sizes. (Otherwise, the JetBlue executives made the point that Southwest effectively operates two or three different aircraft types - the 737-200, 737-300 and 737-700. Others might add that there are substantial commonality benefits.)

JetBlue is not slowing growth planned for the A320. After placing another massive order for up to 115 A320s in April, the current Airbus fleet will almost quadruple to 202 aircraft by 2012 if all of the options are exercised (which has so far always been the case with JetBlue).

The ERJ-190 will simply add to the planned A320 expansion, helping JetBlue maintain extremely rapid growth in the second half of the decade when the A320 growth rate begins to taper off. The airline expects to maintain a 24-25% compound annual ASM growth rate in 2003-2011, which would be a stunning achievement when considering that JetBlue is no longer that small.

Why the ERJ-190?

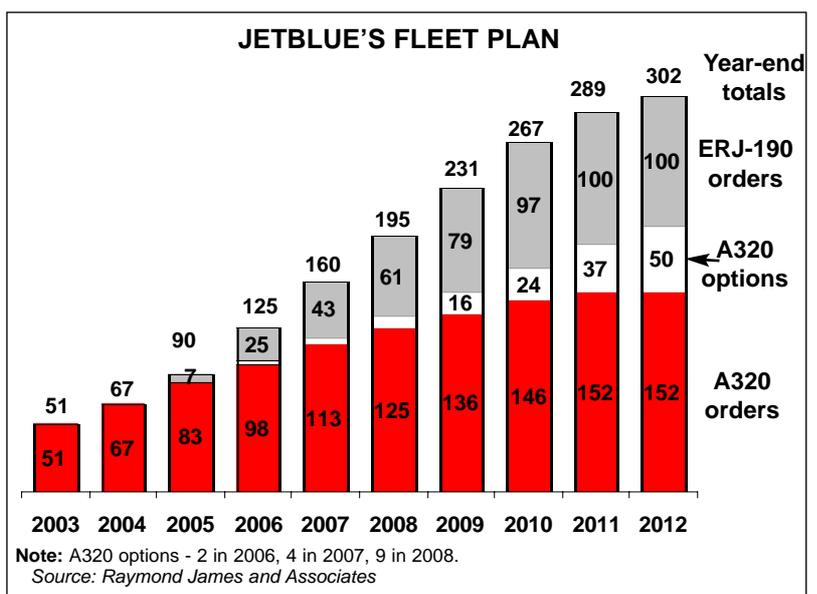
JetBlue began evaluating smaller aircraft types about nine months ago and also

looked at the Boeing 717, the Airbus A318 and the Bombardier CRJ-900. The 717 and the A318 were considered too large - and the A318 could not take the IAE V2500-A5 engines that power the carrier's A320s. The CRJ-900, in turn, did not meet JetBlue's very exacting standards of roominess and cabin comfort.

The JetBlue executives indicated that maintaining what they described as "the JetBlue experience" was a key requirement. The ERJ-190 apparently has the look and feel of a small jet (rather than a regional jet) and can offer the same comforts as JetBlue's A320s, including the famous roomy leather seats, 32-inch seat pitch and even wider aisles. The aircraft will have 100 seats in single class, two-by-two configuration and, like the A320s, will offer DIRECTV satellite programming at every seat.

CFO John Owen said that JetBlue regards the ERJ-190 (which it calls "EMBRAER 190"), with its 100 seats and 2,100-mile range, as "much more like a replacement for a DC-9-30" than a regional jet. Most people think of it as an RJ (with the higher costs and inferior comfort connotations) simply because Embraer has a history of building regional jets.

Owen contrasted JetBlue's plans with the way that other airlines, when contracting with small regional carriers, "water down the experience with their airline" because of



cramped quarters in their partners' regional jets. Of course, pilot scope clauses limit many US major carriers to 50-70 seat RJs.

With this move JetBlue is obviously positioning itself for more head-to-head confrontation with competitors' RJs. It was attracted to the ERJ-190 also because of what Owen described as "artificial economy in the sizes of aircraft" created by scope clauses. Its future 100-seaters flying 11 hours a day will have a huge efficiency advantage over competitors' 50-seat RJs flying typically eight hours a day.

The executives argued that even a 70-seater was too small to stimulate traffic (contrasting JetBlue's strategy with that of US Airways, which in May became the launch customer for the 70-seat ERJ-170). Although in the future more scope clauses will include larger RJs, JetBlue feels that the trend is so gradual that it will retain a competitive advantage for many years to come.

JetBlue also liked the fact that the ERJ-190 is an all-new aircraft - Embraer started with a clean sheet of paper with the fuselage cross-section, not unlike what Airbus did with the A320 in the mid-1980s. "As you stretch or shrink an aircraft, the further you get from the original, the less optimal it becomes in performance", the executives noted.

Of course, the ERJ-190 benefits from being part of a family that Embraer is developing to fill the gap in the market for 70-110 seat jets. It is not yet type certified, but it features advanced technology that has already been tested on the other models, including integrated avionics and fly-by-wire flight controls. It will be powered by GE's latest, most powerful CF34-10 engines.

Comparative pricing is not believed to have been a deciding factor, with Embraer, Airbus and Boeing all offering highly attractive deals (Bombardier is believed not to have made a formal offer). That said, such launch orders always involve extra special discounts prices and generous product support packages.

The price widely quoted was \$6bn for the whole deal, but this is based on Embraer's list prices, and bears little resemblance to the actual, much lower price negotiated.

CASM and profit impact

Rather surprisingly, JetBlue's financial analyses suggested that the ERJ-190 would generate profit margins that are comparable or better than those achieved with the A320. The ERJ-190 is expected to have a one-cent unit cost (CASM) premium over the A320 on comparable stage lengths, but the airline is confident that it will be able to compensate for that on the revenue side.

In theory it sounds perfectly feasible. For example, on the 300-mile NYC-Buffalo route the ERJ-190 would cost \$3 more per seat to operate than the A320. The current average fare of \$60-64 would be raised to \$65-69 on the ERJ-190. The additional \$5 would be enough to improve the profit margin but it should not have negative impact on demand, given that the original (only slightly lower) fare was 50-60% below what other carriers were charging before JetBlue's entry.

In other words, JetBlue should be able to continue to stimulate traffic in new markets just as well with the ERJ-190. It may succeed even better because the aircraft would be utilised in shorter-haul markets, where the best price-cutting opportunities tend to be.

In any case, JetBlue has proved in the past in the highly competitive Northeast-Florida markets that, after competitors have responded to its entry, it does not have to offer the lowest fare to win market share battles. This is because it has been able to build strong customer loyalty based on a superior product and service quality.

The ERJ-190 will obviously have higher fuel, maintenance, pilot training and airport costs per seat than the A320. However, flight and cabin crew costs per seat will be similar because pay rates on the ERJ-190 will be lower. JetBlue does not see this creating problems, because current pilots will not be asked to take pay cuts and because the ERJ-190s will supplement (rather than replace) A320 growth.

Other airlines will pay more to operate the ERJ-190 because JetBlue's cost calculations assume average daily aircraft utilisation.

tion of 11 hours and other unique efficiencies.

The CASM difference between the A320 and the ERJ-190 will in reality be greater than one cent, because the ERJ-190 will typically be deployed on shorter stage lengths. However, because the airline will continue to operate a much larger number of A320s (which have more seats), the negative impact on overall unit costs is not expected to be that significant.

Owen estimates that in 2009 the ERJ-190's average stage length will be about 600 miles, compared to the A320's 1,200 miles. There would be roughly twice as many A320s. As a result, total CASM would be about half a cent higher than with an all-A320 fleet.

In 2002 JetBlue's CASM was just 6.43 cents, representing a very comfortable lead over the rest of the industry. Half a cent more would have taken it to 7 cents - still below Southwest's CASM but not by a large margin.

Is this a risky strategy?

One worry among investors has been that the move to shorter-haul markets might take JetBlue to head-to-head confrontations with Southwest. This was strongly denied by the JetBlue executives, who said that Southwest was not present anywhere near the markets that were being considered. For one thing, Southwest needs bigger markets for its 150-seaters. Also, neither Southwest nor JetBlue is interested in markets that have already been stimulated with low fares. There would appear to be plenty of separate growth opportunities left for both airlines for many more years.

As to the risk of costs creeping up as a result of the ERJ-190 strategy, it is worth noting that AirTran has managed to stay highly cost efficient and profitable with a two-type fleet. Its CASM is only around 8 cents, even though it operates 717s and DC-9s (which it is phasing out) and has a rolling hub (JetBlue is point-to-point).

Like JetBlue, AirTran feels that its future growth opportunities dictate a second air-

craft type and that now is a good time to be placing major orders. However, with its recent 737-700/800 purchase, AirTran is moving in the conventional direction of 150-seaters.

While some analysts may not be totally comfortable with JetBlue's ERJ-190 strategy, they hold the airline's management team in such high regard that they are giving them the benefit of the doubt. The consensus opinion is that the benefits of the strategy will outweigh risks and that the additional growth will create long-term shareholder value.

As is often the case with growth strategies, the biggest risk is likely to be execution. JetBlue will need more terminal space at New York JFK - it is confident of securing it either on an interim or permanent basis (it hopes to get its own terminal facility eventually). It will need to construct new training facilities and be involved in the ERJ-190 certification process, while continuing to rapidly grow A320 operations. JetBlue officials have indicated that there is relief all around that the ERJ-190 will not arrive for another two years.

Thanks to ample reserves and continued healthy cash generation, JetBlue should be able to execute its growth plans. The first 30 ERJ-190s will be taken on operating lease from GECAS, which means that the airline will not need to seek financing for the rest of the new order until 2007.

A few weeks after the ERJ-190 order announcement, on July 3, JetBlue filed plans with the SEC to complete a \$128.6m secondary public offering. This would follow from the hugely successful April 2002 IPO. It will help raise funds for expansion, preventing the balance sheet from becoming excessively leveraged. At the end of 2002, total debt accounted for a still-manageable 63.2% of capitalisation, but there are significant operating lease obligations.

The secondary stock offering will undoubtedly be a success. JetBlue has gone totally against the industry trend since September 11 by posting strong quarterly profits. It has had five consecutive quarters of double-digit operating margins (15.9% in the March quarter). Its per-share earnings are expected to improve by 30-40% annually over the next few years.

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Aviation Strategy

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		Group revenue US\$m	Group costs US\$m	Group op. profit US\$m	Group net profit US\$m	Operating margin	Net margin	Total ASK m	Total RPK m	Load factor	Total pax. 000s	Group employees
Alaska	Year 2001	2,141	2,263	-121.8	-39.5	-5.7%	-1.8%	28,837	19,712	68.4%	13,668	10,742
	Jan-Mar 02	497	548	-51.4	-34.4	-10.3%	-6.9%	7,189	4,791	66.6%	3,193	10,540
	Apr-Jun 02	477	480	-2.2	-2.5	-0.5%	-0.5%	7,932	5,427	68.4%	3,616	10,222
	Jul-Sep 02	620	597	24	11	3.9%	1.8%	8,380	5,911	70.5%	3,978	10,465
	Oct-Dec 02	430	484	-60	-94	-14.0%	-21.9%	7,657	5,092	66.5%	3,367	
	Year 2002	2,224	2,313	-89	-119	-4.0%	-5.4%	31,156	21,220	68.1%	14,154	10,142
	Jan-Mar 03	519	597	-79	-56	-15.2%	-10.8%			66.7%		
American	Year 2001	18,963	20,823	-1,860	-1,762	-9.8%	-9.3%	161,030	176,143	69.4%	99,235	102,093
	Jan-Mar 02	4,163	4,892	-729	-1,563	-17.5%	-37.5%	64,515	44,766	69.4%	21,995	97,800
	Apr-Jun 02	4,479	5,080	-601	-495	-13.4%	-11.1%	70,724	53,125	71.4%	24,340	100,100
	Jul-Sep 02	4,494	5,815	-1,321	-924	-29.4%	-20.6%	73,899	53,236	72.0%	24,952	99,700
	Oct-Dec 02	4,190	4,869	-679	-529	-16.2%	-12.6%	67,964	47,428	69.8%	22,857	93,500
	Year 2002	17,299	20,629	-3,330	-3,511	-19.2%	-20.3%	277,121	195,927	70.7%	94,143	93,500
	Jan-Mar 03	4,120	4,989	-869	-1,043	-21.1%	-25.3%	64,813	44,800	69.1%	21,021	92,200
America West	Year 2001	2,066	2,380	-316	-148	-15.3%	-7.2%	42,709	30,696	71.9%	19,576	13,827
	Jan-Mar 02	460	583	-123	-274	-26.7%	-59.6%	9,780	6,859	70.1%	4,303	11,506
	Apr-Jun 02	533	534	-1	-15	-0.2%	-2.8%	11,024	8,351	75.8%	5,080	11,973
	Jul-Sep 02	510	552	-42	-32	-8.2%	-6.3%	11,504	8,619	74.9%	5,165	12,320
	Oct-Dec 02	522	560	-38	-32	-7.3%	-6.1%	11,154	8,160	73.2%	4,906	
	Year 2002	2,047	2,246	-199	-430	-9.7%	-21.0%	43,464	33,653	73.6%	19,454	13,000
	Jan-Mar 03	523	569	-46	-62	-8.8%	-11.9%	11,027	7,841	71.1%	4,655	
Continental	Year 2001	8,969	9,119	-150	-95	-1.7%	-1.1%	135,962	98,393	72.4%	44,238	44,273
	Jan-Mar 02	1,993	2,180	-187	-166	-9.4%	-8.3%	30,498	22,582	74.0%	10,057	40,312
	Apr-Jun 02	2,192	2,307	-115	-139	-5.2%	-6.3%	33,108	24,922	74.6%	10,727	41,116
	Jul-Sep 02	2,178	2,132	46	-37	2.1%	-1.7%	33,839	25,625	75.0%	10,581	40,925
	Oct-Dec 02	2,036	2,094	-56	-109	-2.8%	-5.4%	31,496	22,382	70.6%	9,651	40,500
	Year 2002	8,402	8,714	-312	-451	-3.7%	-5.4%	128,940	95,510	73.3%	41,014	40,713
	Jan-Mar 03	2,042	2,266	-224	-221	-11.0%	-10.8%	30,699	21,362	68.9%	9,245	
Delta	Year 2001	13,879	15,124	-1,245	-1,216	-9.0%	-8.8%	237,914	163,693	68.8%	104,943	77,654
	Jan-Mar 02	3,103	3,538	-435	-397	-14.0%	-12.8%	54,298	37,384	68.9%	24,618	74,300
	Apr-Jun 02	3,474	3,601	-127	-186	-3.7%	-5.4%	60,709	42,355	73.4%	27,427	75,700
	Jul-Sep 02	3,420	3,805	-385	-326	-11.3%	-9.5%	59,287	44,037	74.3%	27,713	76,000
	Oct-Dec 02	3,308	3,670	-362	-363	-10.9%	-11.0%	56,776	40,419	71.2%	27,290	75,100
	Year 2002	13,305	14,614	-1,309	-1,272	-9.8%	-9.6%	228,068	172,735	71.9%	107,048	75,100
	Jan-Mar 03	3,155	3,690	-535	-466	-17.0%	-14.8%	53,435	36,827	68.9%	24,910	72,200
Northwest	Year 2001	9,905	10,773	-868	-423	-8.8%	-4.3%	158,284	117,682	74.3%	54,056	50,309
	Jan-Mar 02	2,180	2,376	-196	-171	-9.0%	-7.8%	35,022	26,611	76.0%	11,899	45,005
	Apr-Jun 02	2,406	2,452	-46	-93	-1.9%	-3.9%	39,848	29,902	78.9%	13,627	46,260
	Jul-Sep 02	2,564	2,556	8	-46	0.3%	-1.8%	40,321	31,787	78.8%	14,365	45,466
	Oct-Dec 02	2,339	2,951	-612	-488	-26.2%	-20.9%	37,115	27,611	74.4%	12,779	44,323
	Year 2002	9,489	10,335	-846	-798	-8.9%	-8.4%	150,355	115,913	77.1%	52,669	44,323
	Jan-Mar 03	2,250	2,576	-326	-396	-14.5%	-17.6%	36,251	26,653	73.5%	12,284	42,781
Southwest	Year 2001	5,555	4,924	631	511	11.4%	9.2%	105,079	71,604	68.1%	64,447	31,014
	Jan-Mar 02	1,257	1,207	49	21	3.9%	1.7%	26,586	16,726	62.9%	14,463	32,244
	Apr-Jun 02	1,473	1,284	189	102	12.8%	6.9%	29,074	20,314	69.9%	16,772	33,149
	Jul-Sep 02	1,391	1,300	91	75	6.5%	5.4%	28,342	19,180	67.7%	16,256	33,609
	Oct-Dec 02	1,401	1,313	88	42	6.3%	3.0%	28,296	17,835	63.0%	15,554	33,705
	Year 2002	5,522	5,104	417	241	7.6%	4.4%	110,859	73,049	65.9%	63,046	33,705
	Jan-Mar 03	1,351	1,305	46	24	3.4%	1.8%	28,000	17,534	62.6%	15,077	33,140
United	Year 2001	16,138	18,481	-2,343	-2,145	-14.5%	-13.3%	265,291	187,701	70.8%	75,457	96,142
	Jan-Mar 02	3,288	3,999	-711	-510	-21.6%	-15.5%	55,056	39,761	72.2%	15,361	
	Apr-Jun 02	3,793	4,278	-485	-341	-12.8%	-9.0%	60,315	44,896	74.4%	17,501	79,800
	Jul-Sep 02	3,737	4,383	-646	-889	-17.3%	-23.8%	64,147	48,335	75.4%	18,900	79,900
	Oct-Dec 02	3,468	4,462	-994	-1,473	-28.7%	-42.5%	59,988	43,158	71.9%	16,823	77,000
	Year 2002	14,286	17,123	-2,837	-3,212	-19.9%	-22.5%	238,569	176,152	73.5%	68,585	78,700
	Jan-Mar 03	3,184	3,997	-813	-1,343	-25.5%	-42.2%	55,751	39,980	71.7%	15,688	70,600
US Airways	Year 2001	8,288	9,355	-1,067	-1,969	-12.9%	-23.8%	107,347	73,944	68.9%	56,114	43,846
	Jan-Mar 02	1,709	2,079	-370	-269	-21.7%	-15.7%	22,495	15,419	68.5%	11,825	33,859
	Apr-Jun 02	1,903	2,078	-175	-248	-9.2%	-13.0%	23,516	17,658	75.1%	13,000	33,902
	Jul-Sep 02	1,752	1,933	-181	-335	-10.3%	-19.1%	24,075	17,276	71.8%	11,994	33,302
	Oct-Dec 02	1,614	2,217	-603	-794	-37.4%	-49.2%	20,631	14,096	68.3%	10,354	30,585
	Year 2002	6,977	8,294	-1,317	-1,646	-18.9%	-23.6%	90,700	64,433	71.0%	47,155	30,585
	Jan-Mar 03	1,534	1,741	-207	1,635	-13.5%	106.6%	19,579	13,249	67.7%	9,427	27,397

Note: Annual figures may not add up to sum of interim results due to adjustments and consolidation. 1 ASM = 1.6093 ASK.

Aviation Strategy

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		Group revenue US\$m	Group costs US\$m	Group op. profit US\$m	Group net profit US\$m	Operating margin	Net margin	Total ASK m	Total RPK m	Load factor	Total pax. 000s	Group employees
Air France	Year 2000/01	11,148	10,746	402	382	3.6%	3.4%	119,562	93,355	78.1%	42,400	64,717
	Year 2001/02	11,234	11,017	217	141	1.9%	1.3%	123,777	94,828	76.6%		70,156
	Apr-Jun 02	3,276	3,124	163	157	5.0%	4.8%	31,687	24,435	77.1%		
	Jul-Sep 02	3,264	3,122	142	57	4.4%	1.7%	33,806	26,366	78.0%		71,290
	Oct-Dec 02	3,396	3,392	4	2	0.1%	0.1%	32,581	24,558	75.4%		
	Jan-Mar 03	3,240	3,373	-133	-106	-4.1%	-3.3%	32,070	23,906	74.5%		
	Year 2002/03	13,702	13,495	207	130	1.5%	0.9%	131,247	99,960	76.2%		71,525
Alitalia	Year 2000	4,968	5,210	-242	-236	-4.9%	-4.8%	57,483	41,433	72.1%	26,700	23,478
	Jan-Jun 01	2,348	2,504	-156	-228	-6.6%	-9.7%	26,437	18,953	71.7%	12,565	24,023
	Year 2001	4,745	5,007	-262	-818	-5.5%	-17.2%	51,392	36,391	70.8%	24,737	23,667
	Jan-Jun 02	2,462	2,574	-63	-49	-2.6%	-2.0%			69.7%		21,366
	Year 2002	5,279	4,934	-89	101	-1.7%	1.9%	42,224	29,917	70.8%	22,041	22,536
	Jan-Mar 03	1,097	1,226	-187		-17.0%		10,503	6,959	66.3	4,993	21,984
BA	Year 2000/01	13,700	13,139	561	189	4.1%	1.4%	162,824	116,674	71.7%	44,462	62,844
	Year 2001/02	12,138	12,298	-160	-207	-1.3%	-1.7%	151,046	106,270	70.4%	40,004	57,227
	Apr-Jun 02	3,127	2,886	241	61	7.7%	2.0%	35,020	24,679	70.5%	9,665	52,926
	Jul-Sep 02	3,323	2,931	392	240	11.8%	7.2%	35,608	27,301	76.7%	10,607	52,116
	Oct-Dec 02	3,025	2,939	86	21	2.8%	0.7%	34,815	24,693	70.9%	9,200	51,171
	Jan-Mar 03	2,721	2,988	-213	-216	-7.8%	-7.9%	33,729	23,439	69.5%	8,547	50,309
	Year 2002/03	12,490	12,011	543	117	4.3%	0.9%	139,172	100,112	71.9%	38,019	51,630
Iberia	Year 2001	4,240	4,236	4	45	0.1%	1.1%	59,014	41,297	70.8%	24,930	27,567
	Jan-Mar 02	1,070	1,076	-9	-5	-0.8%	-0.5%	13,502	9,429	69.8%	5,916	
	Apr-Jun 02	1,245	1,134	98	76	7.9%	6.1%	14,004	10,105	72.2%	6,726	
	Jul-Sep 02	1,229	1,103	132	104	10.7%	8.5%	14,535	11,419	78.6%	6,624	
	Oct-Dec 02	1,236	1,219	18	-17	1.5%	-1.4%	13,593	9,695	71.3%	5,689	25,544
	Year 2002	5,123	4,852	272	174	5.3%	3.4%	55,633	40,647	73.0%	24,956	25,963
	Jan-Mar 03	1,128	1,183	-55	-24	-4.9%	-2.1%	13,200	9,458	71.6%	5,717	
KLM	Year 2000/01	6,319	6,068	251	70	4.0%	1.1%	75,222	60,047	79.8%	16,100	30,253
	Year 2001/02	5,933	6,018	-85	-141	-1.4%	-2.4%	72,228	56,947	78.7%	15,949	33,265
	Apr-Jun 02	1,639	1,599	40	11	2.4%	0.7%	18,041	14,326	79.4%		34,366
	Jul-Sep 02	1,844	1,523	140	86	7.6%	4.7%	19,448	16,331	82.7%		34,931
	Oct-Dec 02	1,693	1,760	-68	-71	-4.0%	-4.2%	19,063	14,722	77.2%		34,850
	Jan-Mar 03	1,487	1,521	-272	-483	-18.3%	-32.5%	20,390	15,444	75.7%		34,497
	Year 2002/03	7,004	7,147	-144	-449	-2.1%	-6.4%	87,647	69,016	78.7%		34,666
Lufthansa	Year 2000	14,014	12,648	1,366	635	9.7%	4.5%	123,801	92,160	74.4%	47,000	69,523
	Year 2001	14,966	14,948	18	-530	0.1%	-3.5%	126,400	90,389	71.5%	45,710	87,975
	Jan-Mar 02	3,556	3,513	43	-165	1.2%	-4.6%	26,451	19,409	71.0%	9,700	84,802
	Apr-Jun 02	4,968	4,601	285	138	5.7%	2.8%	30,769	22,835	70.8%	11,300	90,308
	Jul-Sep 02	4,431	4,254	454	369	10.2%	8.3%	32,409	25,189	71.1%	12,067	90,704
	Oct-Dec 02							30,282	21,476	70.9%	10,886	
	Year 2002	17,791	16,122	1,669	751	9.4%	4.2%	119,877	88,570	73.9%	43,900	94,135
Jan-Mar 03	4,242	4,588	-346	-411	-8.2%	-9.7%	29,251	20,618	70.5%	10,391		
SAS	Year 2000	5,185	4,853	332	233	6.4%	4.5%	33,782	22,647	67.0%	23,240	22,698
	Year 2001	4,984	5,093	-109	-103	-2.2%	-2.1%	35,521	22,956	64.6%	23,060	22,656
	Jan-Mar 02	1,392	1,534	-142	-133	-10.2%	-9.6%	8,228	5,229	63.1%	5,091	
	Apr-Jun 02	1,965	1,608	242	106	12.3%	5.4%	8,773	6,240	71.1%	6,034	
	Jul-Sep 02	1,821	1,587	233	56	12.8%	3.1%	8,701	6,281	70.2%	5,586	21,896
	Oct-Dec 02	1,984	1,826	158	-34	8.0%	-1.7%	8,334	5,463	65.6%	5,155	
	Year 2002	7,430	7,024	78	-15	1.0%	-0.2%	34,626	23,621	68.2%	21,866	
Jan-Mar 03	1,608	1,654	-224	-188	-13.9%	-11.7%	8,040	4,900	60.9%	4,477	30,373	
Ryanair	Year 2000/01	442	338	104	95	23.5%	21.5%	6,657	4,656	69.9%	7,000	1,476
	Year 2001/02	642	474	168	155	26.2%	24.1%	10,295	7,251	81.0%	11,900	1,547
	Apr-Jun 02	189	153	47	40	24.9%	21.2%	2,852		83.0%	3,540	
	Jul-Sep 02	272	149	123	113	45.2%	41.5%	3,138			4,300	1,676
	Oct-Dec 02	201	149	53	47	26.4%	23.4%			86.0%	3,930	1,761
	Year 2002/03	910	625	285	259	31.3%	28.5%			84.0%	15,740	1,900
easyJet	Year 2000/01	513	455	58	54	11.3%	10.5%	7,003	5,903	83.0%	7,115	1,632
	Oct-Mar 02	285	279	6	1	2.1%	0.4%	4,266		84.2%	4,300	
	Apr-Sep 02	579	474	105	76	18.1%	13.1%	6,503			7,050	
	Year 2001/02	864	656	111	77	12.8%	8.9%	10,769	9,218	84.8%	11,350	3,100
	Oct-Mar 03	602	676	-74	-76	-12.3%	-12.6%	9,594	7,938	82.2%	9,347	

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Aviation Strategy

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		Group revenue US\$m	Group costs US\$m	Group op. profit US\$m	Group net profit US\$m	Operating margin	Net margin	Total ASK m	Total RPK m	Load factor	Total pax. 000s	Group employees
ANA	Apr-Sep 00	5,228	4,793	495	359	9.5%	6.9%	47,586	31,753	66.7%	24,958	
	Oct 00-Mar 01	5,376	5,186	190	-486	3.5%	-9.0%	46,278	29,168	63.0%	24,471	
	Year 2000/01	10,914	10,629	285	-137	2.6%	-1.3%	85,994	58,710	68.3%	43,700	14,303
	Apr-Sep 01	5,168	4,811	357	136	6.9%	2.6%	45,756	30,790	67.3%	25,876	
	Year 2001/02	9,714	9,529	185	-76	1.9%	-0.8%	87,908	57,904	64.7%	49,306	
	Apr-Sep 02	5,322	5,194	127	-69	2.4%	-1.3%	44,429	29,627	66.7%	25,341	
Cathay Pacific	Year 2000	4,431	3,752	679	642	15.3%	14.5%	61,909	47,153	76.2%	11,860	14,293
	Jan-Jun 01	2,031	1,898	133	170	6.5%	8.4%	32,419	23,309	71.9%	5,936	
	Year 2001	3,902	3,795	107	84	2.7%	2.2%	62,790	44,792	71.3%	11,270	15,391
	Jan-Jun 02	1,989	1,753	235	181	11.8%	9.1%	29,537		78.1%		14,300
	Year 2002	4,243	3,634	609	513	14.4%	12.1%	63,050		77.8%		14,600
JAL	Year 1999/00	14,442	14,039	403	177	2.8%	1.2%	119,971	88,479	70.2%	37,200	18,974
	Year 2000/01	13,740	13,106	634	331	4.6%	2.4%	129,435	95,264	73.6%	38,700	17,514
	Year 2001/02	9,607	9,741	-135	-286	-1.4%	-3.0%				37,183	
	Year 2002/03	17,387	17,298	88	97	0.5%	0.6%	145,944	99,190	68.0%	56,022	
Korean Air	Year 2000	4,916	4,896	20	-409	0.4%	-8.3%	55,824	40,606	72.7%	22,070	16,000
	Year 2001	4,309	4,468	-159	-448	-3.7%	-10.4%	55,802	38,452		21,638	
	Jan - Mar 02	1,113	1,060	54	23	4.9%	2.1%	13,409	9,799	73.1%	5,399	
Malaysian	Year 1999/00	2,148	2,120	28	-68	1.3%	-3.2%	48,158	34,930	71.3%	15,370	21,687
	Year 2000/01	2,357	2,178	179	-351	7.6%	-14.9%	52,329	39,142	74.8%	16,590	21,518
	Year 2001/02	2,228	2,518	-204	-220	-9.2%	-9.9%	52,595	34,709	66.0%	15,734	21,438
Qantas	Year 1999/00	5,710	5,162	548	324	9.6%	5.7%	85,033	64,149	75.4%	20,490	29,217
	Year 2000/01	5,473	5,099	374	223	6.8%	4.1%	92,943	70,540	75.9%	22,150	31,632
	Jul-Dec 01	3,050	2,904	125	84	4.1%	2.8%	48,484	37,262	76.9%	13,335	32,361
	Year 2001/02	6,133	5,785	348	232	5.7%	3.8%	95,944	75,134	78.3%	27,128	33,044
	Jul-Dec 02	3,492	3,181	305	210	8.7%	6.0%	51,009	40,779	79.9%	15,292	34,770
Singapore	Year 2000/01	5,729	4,954	775	892	13.5%	15.6%	92,648	71,118	76.8%	15,000	
	Oct 01-Mar 02	2,807	2,508	299		10.7%		46,501	33,904			
	Year 2001/02	5,399	4,837	562	395	10.4%	7.3%	94,559	69,995	74.0%	14,765	29,422
	Apr 02-Sep 02	2,278	2,134	144	289	6.3%	12.7%	49,196	37,799	76.8%	7,775	
	Year 2002/03	5,936	5,531	405	601	6.8%	10.1%	99,566	74,183	74.5%	15,326	30,243

Note: Annual figures may not add up to sum of interim results due to adjustments and consolidation. 1 ASM = 1.6093 ASK.

AIRCRAFT AVAILABLE FOR SALE OR LEASE

	Old narrowbodies	Old widebodies	Total old	New narrowbodies	New widebodies	Total new	Total
1998	187	125	312	67	55	122	434
1999	243	134	377	101	53	154	531
2000	302	172	474	160	42	202	676
2001	368	188	556	291	101	392	948
2002	366	144	510	273	102	375	885
2003 - March	314	144	458	300	110	410	868

AIRCRAFT SOLD OR LEASED

	Old narrowbodies	Old widebodies	Total old	New narrowbodies	New widebodies	Total new	Total
1998	482	243	725	795	127	922	1,647
1999	582	230	812	989	170	1,159	1,971
2000	475	205	680	895	223	1,118	1,798
2001	286	142	428	1,055	198	1,253	1,681
2002	439	213	652	1,205	246	1,451	2,103
2003 - March	49	8	57	110	13	123	180

Source: BACK Notes: As at end year; Old narrowbodies = 707, DC8, DC9, 727, 737-100/200, F28, BAC 1-11, Caravelle; Old widebodies = L1011, DC10, 747-100/200, A300B4; New narrowbodies = 737-300+, 757, A320 types, BAe 146, F100, RJ; New widebodies = 747-300+, 767, 777, A600, A310, A330, A340.

Aviation Strategy

Databases

EUROPEAN SCHEDULED TRAFFIC

	Intra-Europe			North Atlantic			Europe-Far East			Total long-haul			Total Int'l		
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %
1995	154.8	94.9	61.3	154.1	117.6	76.3	111.1	81.1	73	362.6	269.5	74.3	532.8	373.7	70.1
1996	165.1	100.8	61.1	163.9	126.4	77.1	121.1	88.8	73.3	391.9	292.8	74.7	583.5	410.9	70.4
1997	174.8	110.9	63.4	176.5	138.2	78.3	130.4	96.9	74.3	419.0	320.5	76.5	621.9	450.2	72.4
1998	188.3	120.3	63.9	194.2	149.7	77.1	135.4	100.6	74.3	453.6	344.2	75.9	673.2	484.8	72
1999	200.0	124.9	62.5	218.9	166.5	76.1	134.5	103.1	76.7	492.3	371.0	75.4	727.2	519.5	71.4
2000	208.2	132.8	63.8	229.9	179.4	78.1	137.8	108.0	78.3	508.9	396.5	77.9	755.0	555.2	73.5
2001	212.9	133.4	62.7	217.6	161.3	74.1	131.7	100.9	76.6	492.2	372.6	75.7	743.3	530.5	71.4
2002	197.2	129.3	65.6	181.0	144.4	79.8	129.1	104.4	80.9	447.8	355.1	79.3	679.2	507.7	74.7
May-03	17.8	11.6	64.9	15.7	12.8	81.2	9.2	5.8	63.6	36.4	26.9	74.0	56.8	40.2	70.8
Ann. chng	-0.9%	-2.5%	-1.1	-3.0%	-0.8%	1.8	-15.2%	-28.7%	-12.0	-5.6%	-7.2%	-1.2	-4.4%	-5.7%	-0.9
Jan-May 03	84.4	50.8	60.1	74.2	56.1	75.6	51.8	37.6	72.7	184.8	139.5	75.5	282.2	199.0	70.3
Ann. Chng	1.9%	-1.6%	-2.1	4.7%	2.1%	-2.0	-0.6%	-10.3%	-7.9	2.0%	-1.1%	-2.4	1.7%	-1.6%	-2.4

Source: AEA

US MAJORS' SCHEDULED TRAFFIC

	Domestic			North Atlantic			Pacific			Latin America			Total Int'l		
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %
1995	900.4	591.4	65.7	130.4	98.5	0.8	114.3	83.7	73.2	62.1	39.1	63.0	306.7	221.3	72.1
1996	925.7	634.4	68.5	132.6	101.9	76.8	118.0	89.2	75.6	66.1	42.3	64.0	316.7	233.3	73.7
1997	953.3	663.7	69.6	138.1	108.9	78.9	122.0	91.2	74.7	71.3	46.4	65.1	331.2	246.5	74.4
1998	960.8	678.8	70.7	150.5	117.8	78.3	112.7	82.5	73.2	83.5	52.4	62.8	346.7	252.7	72.9
1999	1,007.3	707.5	70.2	164.2	128.2	78.1	113.2	84.7	74.8	81.3	54.3	66.8	358.7	267.2	74.5
2000	1,033.5	740.1	71.6	178.9	141.4	79.0	127.7	97.7	76.5	83.0	57.6	69.4	380.9	289.9	76.1
2001	1,025.4	712.2	69.5	173.7	128.8	74.2	120.1	88.0	73.3	83.4	56.9	68.2	377.2	273.7	72.6
2002	990.0	701.6	70.9	159.0	125.7	67.2	103.0	83.0	80.5	84.1	56.8	67.5	346.1	265.5	76.7
May - 03	78.8	58.9	74.7	11.4	9.4	82.3	6.5	4.2	69.8	6.7	4.5	67.1	24.7	18.5	74.8
Ann. chng	-6.0%	-1.5%	3.4	-19.7%	-17.6%	2.1	-25.8%	-35.2%	-10.1	-3.0%	3.2%	4.0	-17.7%	-19.1%	-1.3
Jan-May 03	392.2	278.6	71.0	56.2	41.2	73.4	41.4	29.4	70.9	35.0	24.1	68.7	130.6	93.2	71.4
Ann. chng	-2.0%	-0.2%	1.3	-8.2%	-11.8%	-3.1	-2.2%	-15.1%	-10.8	1.0%	2.0%	-0.7	-4.1%	-9.7%	-4.5

Note: US Majors = Aloha, Alaska, American, Am. West, American Transair, Continental, Cont. Micronesia, Delta, Hawaiian JetBlue, MidWest Express, Northwest, Southwest, United and US Airways Source: ATA

JET ORDERS

	Date	Buyer	Order	Price	Delivery	Other information/engines
Boeing	1 Jul	AirTran	28 737-700s			CFM56-7B plus 50 options
			4 717s			plus six options
	30 Jun	ANA	45 737-700s		12/05	CFM56-7
Airbus	16 Jun	Emirates	21 A380s		1Q 09 -	
			18 A340-600s		2Q 07 -	
			2 A340-500s		4Q 04 -	
	19 Jun	Qatar A/W	8 A330-200s 6 A330-300s		1Q 04 -	plus 6 options
		2 A340-600s		2Q 06 -	plus 8 options	
			2 A321s			

Note: Prices in US\$. Only firm orders from identifiable airlines/lessors are included. Source: Manufacturers

ICAO WORLD TRAFFIC AND ESG FORECAST

	Domestic			International			Total			Domestic growth rate		International growth rate		Total growth rate	
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK %	RPK %	ASK %	RPK %	ASK %	RPK %
1993	1,349	855	63.3	1,785	1,205	67.5	3,135	2,060	65.7	3.4	2.0	4.4	4.8	3.9	3.6
1994	1,410	922	65.3	1,909	1,320	69.1	3,318	2,240	67.5	4.6	7.9	6.9	9.4	5.9	8.8
1995	1,468	970	66.1	2,070	1,444	69.8	3,537	2,414	68.3	4.1	5.4	8.5	9.4	6.6	7.8
1996	1,540	1,043	67.7	2,211	1,559	70.5	3,751	2,602	79.4	4.9	7.4	6.8	8.0	6.0	7.8
1997	1,584	1,089	68.8	2,346	1,672	71.3	3,930	2,763	70.3	2.9	4.5	6.1	7.2	4.8	6.1
1998	1,638	1,147	70.0	2,428	1,709	70.4	4,067	2,856	70.3	3.4	5.2	3.5	2.2	3.4	3.4
1999	1,911	1,297	67.9	2,600	1,858	71.5	4,512	3,157	70.0	5.4	5.0	5.7	7.4	5.6	6.4
2000	2,005	1,392	69.4	2,745	1,969	71.8	4,750	3,390	70.8	4.9	7.2	5.6	6.0	5.3	6.5
*2001							4,698	3,262	69.4					-1.1	-3.9
*2002							4,607	3,294	71.1					-1.9	0.4
*2003							4,903	3,584	73.1					6.4	9.4
*2004							5,154	3,819	74.1					5.1	6.6

Note: * = Forecast; ICAO traffic includes charters. Source: Airline Monitor, June 2002

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