Aviation Strategy

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Airbus: what's happening to the SCE conversion?

Just when everything seemed to be going swingingly for Airbus, it has run into problems with its conversion from a French-style consortium, known as a *groupement d'interet economique,* into a proper company. This was supposed to coincide with the introduction of the euro in January 1999. Now most observers think it will be a miracle if it happens in time for January 2000. The reason is that Airbus has become caught up in the grindingly slow gearwheels of the reorganisation of Europe's aerospace and defence industries. After years protesting that Airbus's conversion into a Single Corporate Entity (SCE) was a related but essentially different process, now even Airbus's British and German partners accept that the two can no longer be held apart.

They have little choice but to accept reality. Airbus is being used as a high card in the game of poker the British, Germans and French are playing over defence and aerospace reorganisation. Ever since the US reduced its 18 defence contractors to four, with the help of some White House nudging and federal 'pay-offs for lay-offs', Europeans have been agonising about how to something similar. The fear is that the heavily export-oriented European defence contractors will be outgunned by the new powerful American groups such as Boeing McDonnell Douglas and Lockheed Martin. Only three European groups (British Aerospace, GEC and Thomson) feature in the world's top ten, and the world leader Lockheed Martin has defence revenues ($18bn) twice the size of BAe's.

British Aerospace and DASA, the aerospace end of Daimler-Chrysler, the car group, would like to merge, combining their shares in Airbus to make a dominant 58%. Their defence interests would also form the core of a European Aerospace and Defence Company (EADC). Publicly the two companies insist that they would like the widest possible shareholding structure for this group.

Up to a point this is true; but there are two big caveats. One is that neither the British nor the Germans want their French Airbus partner, Aerospatiale, involved until the last vestige of state ownership has gone. The second is that they would really, really like to do their own bilateral deal so that they can then admit a subservient French shareholder at a later date. There is also a suspicion that they would like to keep the French at arms' length so that they could make themselves as a duo more attractive to American partners. The American defence contractors, to say nothing of the administration, suspect the French (echoes of the independent nuclear policy of General de Gaulle's force de frappe).

The French government sees all this going on, and has realised that Airbus is its big card to hold back or to play to ensure it gets its way. The trouble is that the French are not quite sure how best to play the card. Meanwhile, the government has encouraged Aerospatiale to suspend the work on the conversion to the SCE. Officially the partners will say that much progress is being made on various technical issues. But in reality that is a discussion of the *(continued on page 2)*

Analysis

Briefing

Management

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entertainment programme on the Titanic, while an ominous white mass looms ahead.

In truth, the critical issue in the SCE negotiations is the exchange of valuations of the assets devoted to Airbus production by the various partners. The French say that this has had to be frozen because of the impending privatisation of Aerospatiale through its absorption into the private Lagardere/Matra defence company, which in turn is assuming the state's controlling interest in the semi-private Dassault company. So the French case is that value of the Aerospatiale Airbus assets has to be reviewed in the light of this wider consolidation within France.

A wider role

Airbus has another fundamental role in the reorganisation of the wider aerospace and defence industry. One is that its success - it has won about half the market from Boeing by the measure of net new order intake in the past two years and its unit costs may now be below those of Boeing - inspires emulation for a military aerospace grouping. The other is that it might prove a counter-balancing civilian business as a division of EADC.

The French know they hold this big card, but they are divided on how to play it. Ever since the first U-turn by the socialist administration in July, when they signalled they would start to privatise Aerospatiale so that it could join in the wider Euro-game, they have been making eyes at the Germans and British to attract their attention. These flirtations have been spurned by the stuffy northern Europeans, partly because they know the French may cede yet more. The latest French ploy was for their defence minister to signal through the press that the state would be prepared to head for a small stake of around only 15% in EADC (through a 30% holding in Aerospatiale) plus a golden share of the type that the British government has held in BAe ever since it was privatised in the mid-1980s.

When this flopped, prime minister Lionel Jospin called a special meeting of ministers to discuss what to do next to safeguard French interests. From this meeting two schools of thought emerged. Most of the French companies involved would simply like the government to clutch the Airbus card close to their chests and block the SCE conversion as a way of forcing the German and the Brits (both of whom are desperate to see Airbus converted) to be kind to the French view on the wider EADC.

The other French view is that the government should be more pro-active and meld all the big French defence companies together in a rush - i.e. put the Thomson defence electronics group, in which the state holds a big stake, together with Aerospatiale, Lagardere and Dassault. The Alcatel electronic engineering group could become an associate member of this, and the UK's GEC - variously involved with some of the partners in civil and defence joint ventures - would be bound in too. This would create a weighty French base in defence aerospace that would win respect from the British and Germans and force them to integrate it as an equal in an EADC.

What has spurred French manoeuvres is the speed with which the Germans and the British forged a partnership to dominate the European equity markets, with a virtual partnership between London and Frankfurt that has left Paris struggling to catch up. The difficulty the French face is that in addition to holding their end up with the British and the Germans they have to be able to square the unwelcoming Americans.

There was a time a few years ago when Lockheed was interested in joining Airbus as a risk-sharing partner in key programmes such as the proposed A3XX 550-seater. But on pure defence matters there is a huge gulf of suspicion between France and the US, which is largely historical and cultural (some Americans have never forgotten De Gaulle's withdrawal from active Nato involvement at the height of the Cold War). And both the British and the Germans - i.e. BAe and DASA - are quite keen on some transatlantic involvement in any EADC. Indeed there is good industrial logic in this, in the sense that the US is a huge market and America holds sway in many third-country defence markets. All of which explains why Airbus is being sucked into a morass. Its new director-general Noel Forgeard tries to put a brave face on things, but in reality he is highly frustrated at the trap Airbus has been snared in.

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Euro-regionals: marriages, divorces and spouse-swapping

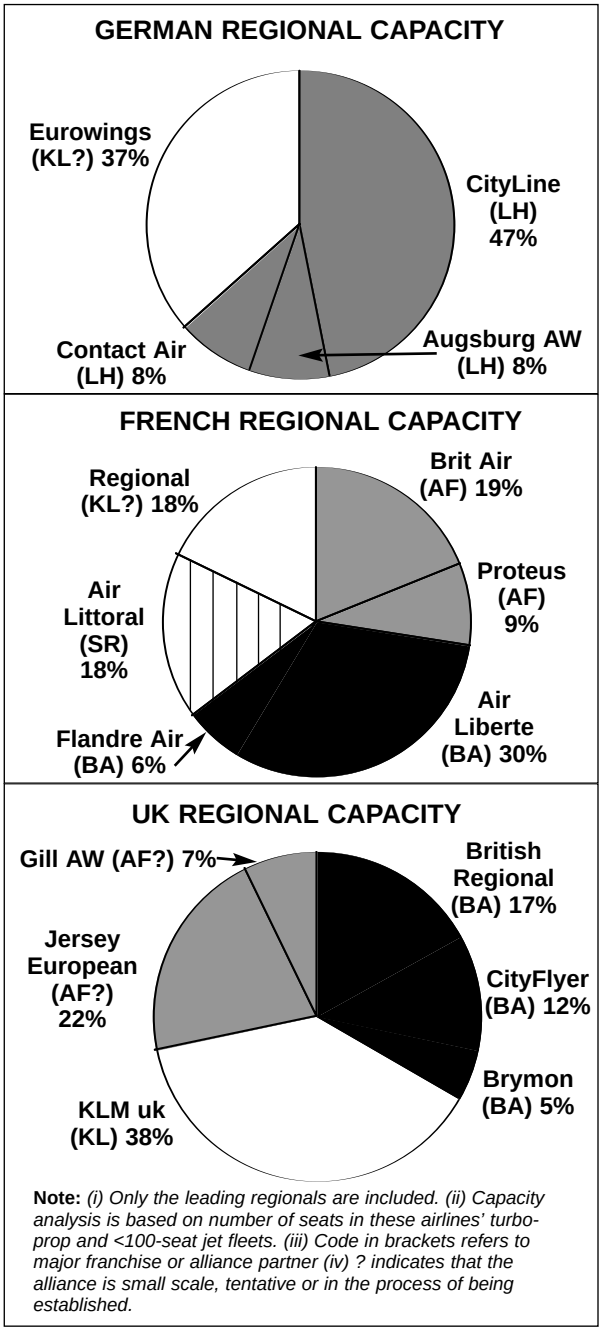
The European regional airline industry is undergoing rapid growth, with equally rapid changes in the alliances between them and the Euro-Majors.

For the regionals the key to survival and the road to prosperity lies in their ability to transfer from own-operations to being a franchise partner of one or more of the Euro-Majors. Under a franchise agreement the regional operates a route with its own aircraft painted in the livery of the franchiser (the cabin crew and check-in staff usually also wear the major airline's uniforms). While the franchisee bears all the operating costs of the service the franchiser is responsible for the marketing and also may play the lead role in planning the route development and traffic forecasting. Usually the franchisee is allowed freedom to set fares and the franchiser gains its income from a fee which ranges from 3% to 8% of revenue, depending on the characteristics of the route.

The Euro-Major's brand is a guarantee of additional traffic for the regional. Apart from the comfort factor of the established name, there is the critical importance of participating in the Major's FFP (though the regional has to buy the rewards from the Major). Brit-Air, for example, experienced an overnight 15% increase in traffic on Brest-Lyons when it moved from operating this route on its own behalf to being an Air France franchisee. Augsburg Airways contrasts the growth rate on its own established services in southern Germany - 8% in the first half of the year - with those on its new Team Lufthansa routes - 78% in the first six months of 1998.

However, getting to the point where a regional is accepted as a fully-fledged can be a difficult process. The regional has, in effect, to prove to the Major that it is capable of operating services to the required levels of service quality, technical reliability, etc. Wet-leasing can be used as an intermediate step, reducing the risks for both parties.

This 'investment' period can prove to be a severe drain on the regional's resources. And, as regional carriers are typically thinly capitalised to begin with (having frequently been originally established by local businessmen and/or pilots), they start to face a cash problem just at the time when they are breaking through into the franchise world. They inevitably are also looking to order regional jets at this point.



Note: *(i) Only the leading regionals are included. (ii) Capacity analysis is based on number of seats in these airlines' turbo-prop and <100-seat jet fleets. (iii) Code in brackets refers to major franchise or alliance partner (iv) ? indicates that the alliance is small scale, tentative or in the process of being established.*

The equity markets have proved to be remarkably receptive to IPOs from regional airlines, perhaps gaining some confidence from the stock price performance of US regionals (see pages 10-13). Brit Air and Regional Airlines have both completed successful flotations on the secondary market of the Paris Bourse. British Regional, comprising the former turboprop subsidiaries of British Midland now franchised to BA, was listed on the London stock exchange this summer at a price that capitalised the group at £97m ($157m).

Eurowings, which is currently totally owned by two individuals - the founder and the managing director - has stated that it intends to partially float on the German stockmarket in order to raise funds for its jet expansion plans. But floating on the Frankfurt markets will present more difficulties than on the London or Paris exchanges, so this flotation, like the one mooted for Augsburg, is currently scheduled for the long -term. Proteus Airlines may soon be seeking additional capital to fund its rapid expansion on Air France-franchised routes.

CityFlyer Express had been widely expected to go for a flotation before BA agreed in late November 1998 to buy out its franchise partner for a reported £75m ($120m). This appears to be a very lucrative deal for the airline's founders, who are the senior manager, plus their venture capital backers. They sold the original version of this carrier to Air Europe in the late 1980s, then bought it back at a bargain price when Air Europe went bankrupt in 1991.

From the perspective of the major airline, the strategic importance of controlling its regional carriers is linked to the following factors:

- Maintaining a dominant share of the domestic regional market;
- Developing routes and carrying its brand into markets that it does not have the aircraft nor cost structure to operate;
- Feeding not only its main hubs but also its regional hubs, linking in with the flag-carrier's services on domestic trunk routes;
- Preventing incursions from rival carriers into its home territory or penetrating into new markets;
- Capturing the loyalty of passengers on regional services, who are typically high-yield, price-insensitive business travellers; and
- Outsourcing routes if market developments do not make them viable for the parent airline.

However, this does not imply that a flag-carrier can automatically expect full control over its domestic regional markets. There have been some surprising developments in the three main national European markets. The charts on page 3 give a snapshot of the French, German and British markets. Here we have broken down the number of seats in the fleets (turboprops and jets of under 100 seats) of the main regionals and indicated the regionals' main allegiances.

France

It appears that Air France, perhaps diverted by the difficulties of absorbing Air Inter, has allowed itself to be outmanoeuvred in its own country. Having signed a break-through agree-

EUROPEAN REGIONALS' JET FLEET PLANS

	Current fleet	Orders (options)	Delivery/retirement schedule/notes
CityLine			
CRJ	31	23 (7)	Delivery in 2000-2002
BAe 146	18	0	
TOTAL	**49**	**23 (7)**	
Eurowings			
BAe 146	**10**	**0**	
Air Liberte			
F28	6	0	
F100	11	0	
TOTAL	**17**	**0**	
Air Littoral			
CRJ	14	4	Delivery by 1999
F100	6	0	
TOTAL	**20**	**4**	
Brit Air			
CRJ	**13**	**13**	Delivery by 2001
Flandre Air			
Emb135	0	10 (10)	Delivery by 2002
Emb145	0	1	Delivery in 2000
TOTAL	**0**	**11 (10)**	
Regional Airlines			
Emb135	0	5	Delivery by 2000
Emb145	6	5	Delivery by 2000
TOTAL	**6**	**10**	
British Regional Airlines			
Emb145	5	10 (3)	Delivery by 2000
BAe 146	3	0	
TOTAL	**8**	**10 (3)**	
CityFlyer Express			
BAe 146	5	2 (2)	Delivery in 1999
Jersey European Airways			
BAe 146	17	0	
BAC 1-11	1	0	
TOTAL	**18**	**0**	
KLM uk			
BAe 146	10	0	
F100	15	0	
TOTAL	**25**	**0**	

ment with its pilots unions that, in effect, outsources all flying activities on aircraft of less than 100 seats, Air France finds itself with only two dedicated franchise partners - Brit Air and Proteus - a situation which leaves these two carriers in a surprisingly strong negotiating position with the national carrier. A further consideration for Air France is that it needs to fill the newly available slots at CDG2 with either its own services or those of its allies, otherwise they will be distributed to rivals.

British Airways can actually claim to have the greatest single influence on the French regional market through Air Liberte, which of course is more than a regional airline, and now Flandre Air. In October Flandre Air, based at Lille, announced that it was becoming a dedicated Air Liberte franchisee, dispensing with its own code. This again strengthens the BA/American enclave at Paris Orly.

Perhaps a worse blow for Air France was the decision, also at the end of October, by Montpellier-based Air Littoral to sell a 44% stake to the SAirGroup. Up to the last moment it seemed that the stake would go Air France's franchisee, Brit Air. The Air Littoral investment appears to be one of the more logical moves that Swissair has made in its attempts to expand beyond the confines of its non-EU base by buying minority stakes in a variety of flag-carriers, charters and regionals. It gains partial control of a developed southern French network and gets into Nice, the most important provincial airport in France. Meanwhile, Air Littoral is in the process of relinquishing its former AF and LH joint-codes (Lufthansa's small stake in the airline has gone to Swissair).

Regional Airlines, based at Clermont-Ferrand, has followed a strategy of allying with as many flag-carriers as possible, including Air France, Iberia, Alitalia and KLM. While Regional appears determined to remain independent, the closest links are with KLM: the plan is to launch new feeder services to Amsterdam and Milan Malpensa.

Germany

By contrast Lufthansa has an iron grip on its domestic regional market (though of course there is Deutsche BA operating 737 services from Munich).

CityLine, a wholly owned subsidiary, operates domestic and intra-European regional services with an exclusively regional jet fleet (18 BAe 146s and 31 CRJs). CityLine could claim to be the closest European equivalent to the US mega-regional Comair, but its cost structure, although lower than its parent's, does not seem to be sufficiently competitive at present. Augsburg and Contact Air are the domestic turboprop members of Team Lufthansa.

The other main player in the German regional market, however, is moving into the KLM camp. Eurowings, based at Dortmund, which is also an Air France codesharer on Paris routes, announced that it had a signed an eight-year cooperation agreement with KLM. The agreement includes participation in KLM's FFP and expansion of franchise service from Amsterdam to 15 German cities. Eurowings has also signed another codesharing agreement with Alitalia, and so fits into the grand KL/AZ intra-European strategic plan.

The UK

The UK regional market differs from the continental markets in that it is much more compressed, with significantly more intermodal competition and domestic air traffic very concentrated on the trunk routes to/from London, Glasgow, Belfast, etc. There is not the same scope for developing domestic regional services as in France or Germany.

Nevertheless, it comes as a small surprise to observe the relative size of BA's franchises in the domestic market. BA's move to buy out Gatwick-based CityFlyer is also rather surprising as one of the reasons for keeping franchisees independent is to ensure that their cost structures do not drift up towards that of the parent. Perhaps BA, with its experience of Go, is now confident that it can prevent this happening, and it appears to have decided that CityFlyer is of such strategic importance that it has to be locked into the BA group.

While Air France's links with Gill Airways and Jersey European are limited to a few individual routes to France, KLM has clearly established a substantial offshore airline in the UK. KLM uk, now a 100% subsidiary, is a regional that has evolved into the major carrier at London Stansted and now competes more on trunk than regional routes - a model for Eurowings?

Reforming ownership laws: inevitable and not so radical

One aspect of today's airline industry remains firmly rooted in the distant past - aviation is still treated by governments as something 'special' when it comes to allowing foreigners to own and control national companies. Most countries - even (especially?) some of those that claim to favour open markets and increased competition - continue to apply old-fashioned rules designed to ensure that airlines remain 'protected' from foreign investment.

As EU transport commissioner Neil Kinnock has noted: "Aviation is still not a normal economic activity because the restructuring and consolidation of the airline business continues to be hampered by regulatory barriers inherited from the time before liberalisation."

Or in the words of Don Carty, chairman and CEO of American: "Airlines have always had a peculiar relationship with the sovereignty of nations. There are no 'flag' chemical companies or 'flag' hotel companies. But there are 'flag' airlines, and individual nations have historically protected those airlines by limiting competition from airlines from other countries and by limiting foreign ownership ... If ours were a normal business, we could grow our overseas presence by simply building our existing network throughout Europe, Asia and Latin America - or by acquiring airlines who had established such networks. But the airline business is somewhat unique."

In fact, the origins of the current ownership and control restrictions can be traced all the way back to the International Air Transit and International Air Transport Agreements of 1944 and the UK/US Bermuda I Air Services Agreement that followed. Some have argued that what began as a relatively permissive regime, gradually became increasingly restrictive as states adopted a more mercantilist approach to international air transport. Whether this was the case or not, it is certainly true that only relatively recently has persistent pressure emerged to carry out a fundamental reform of the ownership and control rules.

By Barry Humphreys, Director of External Affairs & Route Development, Virgin Atlantic Airways

IATA, which established a working group to consider this subject, has suggested five reasons why change is now being pursued:

- Privatisation of airlines;
- The desire to establish global networks;
- Increasing capital requirements;
- The desire to cement marketing alliances through equity participation between carriers of different nationalities; and
- The development of the notion of community (especially EU) ownership and control.

Whatever the reason, it is evident that the commercial pressure for change is building up and forcing governments to re-examine their traditional positions.

Sub-optimal restructuring

The growth of global alliances is of particular relevance here. The contradiction between an increasingly global business and national ownership rules is evident for all to see. The industry has been forced to restructure itself - for example by creating a series of loose-knit alliances - in a way that is clearly not optimal. In many respects airline alliances represent an artificial response to the artificial problem created by the refusal of governments to permit the type of restructuring that other industries have long since experienced.

As Fred Reid commented when he was president and COO of Lufthansa: "…alliances ... are only an interim answer to the question of how to operate a global aviation network. The best solution, in my view, would be the elimination … of the laws that keep meaningful levels of transnational ownership over the horizon."

A great deal of attention, of course, has focused on the US market. It has long been an irritant to many countries, not least the UK, that the US should lecture the world about the benefits of competition and open skies whilst maintaining a protected home market. The size and structure of the US domestic market undoubtedly provides substantial benefits for US carri-

ers when competing in international markets. Yet so far the US has refused to contemplate the removal of ownership and cabotage restrictions. Even the modest reform of increasing the proportion of voting shares in US airlines available for foreign ownership, from 25% to the 49% found in most other countries - a reform that is supposed to have the support of the current US Administration - has yet to be introduced.

Why discourage foreign ownership?

Those who seek to maintain the current US ownership restrictions focus on two issues in particular: national defence and employment. Neither argument stands up to any serious analysis. As has been widely reported, Virgin is keenly interested in establishing a US airline. Richard Branson has given a commitment that in the event of a national emergency, "Virgin America" aircraft would be put at the disposal of the Pentagon. Similarly virtually all staff, and quite possibly all aircraft as well, would be American. Given such a commitment, what exactly is the problem supposed to be? What are the opponents trying to protect?

On the other hand, the benefits of increased foreign investment could be substantial. Criticism of the lack of real competition within the US domestic market has grown markedly in recent years. Fares on many routes have increased, whilst service quality has declined. Co-operation rather than competition has become the industry's driving force, with a possibility that the US market could soon be dominated by just three mammoth domestic alliances. Alfred Kahn points out that there is a technical term to describe all this: "It's called chutzpah!"

There is ample evidence of a need for new entrants to challenge the positions of the dominant carriers, particularly new entrants with access to considerable financial resources, and the ability and willingness to stand up to bullying tactics by the Majors. The reality is that the "main hope," to quote Kahn again, for introducing more competition to the US market lies outside the US. The levels of financial and managerial resources needed are unlikely to be found in sufficient quantity if the US continues to maintain its current protectionist barriers. Politicians such as John McCain, chairman of the Senate Commerce Committee, realise this and are lending their support to a change in the law.

A measure of how different aviation still is, is that it is almost the only industry where foreign investment is positively discouraged. If a foreign car manufacturer announces its intention to build a plant in the US it is invariably overwhelmed with requests from politicians and businessmen to site the plant in their cities. Virgin faces no significant legal barriers to opening Megastores in the US, any more than Tower Records does to establishing branches in the UK. Open markets benefit consumers, and benefit the industries themselves by ensuring they remain competitive. But not apparently in aviation - at least not so far.

The US has an excellent opportunity to reform its airline ownership and control rules. It is desperate to get rid of the Bermuda II air services agreement with the UK and gain access to Heathrow for all US carriers. Its strategy of doing this by holding out the prospect of anti-trust immunity for the BA/AA alliance is clearly not working. In any case, such a strategy is wrong in principle. Anti-trust immunity for airline alliances should not be used as a bargaining tool in international negotiations. It should be granted only when the regulatory authorities are satisfied that an alliance will produce net benefits for consumers.

The US approach has allowed the UK to take the moral highground. Rather than rolling over and gratefully accepting the US version of open skies, as the US appeared to have expected, the UK is quite rightly insisting that if competition is to mean anything, UK carriers must have effective access to the US domestic market. Changes to the ownership and control rules are an integral part of this strategy. Fred Reid has argued that "open skies without ownership liberalisation is unsustainable in the long-term". The question is: for how long can the US sustain its protectionist international aviation policy?

The US pleads that this is all too difficult and time-consuming, requiring changes to US law over which the Administration does not have full control. In fact, the suspicion must be that the US does not see the need to be more

radical. This could well be a mistake. Even if the end result of the UK negotiations is the maintenance of Bermuda II, or only modest reform, the European Commission will be next in line with the same demands. The pressure for reform is not likely to lessen.

Within the EU ownership and control rules have already been reformed. There are no restrictions on individuals or companies of one member state buying or establishing an airline in another member state, or on an EU airline operating anywhere within the Community (apart from a few minor exclusions). The result has certainly been an increase in competition. However, the EU continues to restrict investment in its airlines from non-EU sources, and even within the EU foreign ownership and control can still be a problem when a carrier seeks to operate to a non-EU country.

Neil Kinnock claims to have "spent many hours in the last three years trying to explain to my colleagues in the member states that these nationality clauses are not only legally inconsistent with the freedoms of the common market, but that they are also economically harmful because they preserve the fragmentation of the internal market and prevent a sound and efficient restructuring of the European aviation industry … The rational course that should be taken is plain. But old habits die hard."

Some countries in Europe, notably the UK, have gone further than required under European law. The UK's model bilateral agreement already refers to an airline's 'principal place of business' rather than the proportion of its shares owned by nationals. (The concept of 'principal place of business' exists already in both Chicago and EU legislation, although it is not precisely defined.) Several countries have agreed to the UK text. UK carriers such as Britannia and Monarch have been 100% owned by non-UK (and non-EU) nationals for many years, yet still regarded as UK and EU airlines. They are based in the UK, they operate under UK regulatory supervision, they employ UK staff, etc. Can anyone really say that for all intents and purposes they are not UK companies, apart from the fact that their ultimate owners happen to be Canadian or Swiss? They are only remarkable because the airline industry continues to be treated differently from most other businesses.

Lots of precedents

In fact, the UK is far from unique in Europe in seeking to reform the outdated ownership and control rules. A recent task force on this subject established by ECAC revealed that the Netherlands, Switzerland, Sweden, Norway, Denmark, Finland, Germany and Italy are all pursuing a similar policy with bilateral partners outside the EU, and each has had at least some success. Similarly, the ICAO Air Transport Regulation Panel has recommended that the traditional controls on ownership and control should be replaced by the concept of a "strong link" between an airline and the state which is designating it.

Outside Europe change is also evident. New Zealand long ago allowed one of its airlines to be owned by an Australian company, and Air New Zealand now exerts considerable control over Ansett of Australia. Foreigners have had control over Aerolineas Argentinas, Aero Peru and, until its demise, Viasa. Peru's Congress recently even passed a law allowing foreign airlines to operate domestic routes, following widespread complaints from consumers and tourism interests about delayed and cancelled flights by local carriers. Similar examples are to be found elsewhere, and of course Air Afrique, Gulf Air and SAS are long-standing examples of pan-national airlines for which an exception to the ownership and control rules has been made. The trend is clearly towards more, genuinely open markets.

Even the US has shown flexibility when it was in its interest to do so. The cases of Iberia's control over Aerolineas Argentinas and, in a different context, KLM's investment in Northwest indicated that rules can be re-interpreted, at least up to a point. In Europe, the Swissair investment in Sabena pushed the EU ownership and control rules to the limit, and some would say beyond the limit.

The real concerns

The traditional reasons to resist reform, especially those based on national security and employment arguments, may not stand up to analysis, but there are nevertheless genuine reasons for states to be at least cautious. In particular, concern continues to be expressed

about possible safety implications if airlines are no longer tied so closely to their 'home' countries. No-one wants to see the concept of 'flags of convenience' spreading from shipping to aviation.

In fact, the evidence suggests that the risk is minimal. Those countries that have replaced the traditional ownership restriction with a 'principal place of business' requirement have also insisted that an airline must have an Air Operator's Certificate from the state designating it. This should be sufficient to prevent carriers from transferring responsibility for their safety supervision to countries unable or unwilling to carry out their duties effectively.

Even the International Transport Federation, representing trade unions with members employed in transport, which campaigns ceaselessly against flags of convenience, has acknowledged that this safeguard "would certainly appear to go a long way" to solving the problem, although it cautions that entrepreneurs' capacity to find a loophole in the rules should not be underestimated. Insisting on an AOC issued by the designating state will not guarantee that every airline is supervised properly for safety purposes (witness the problems encountered with several countries' regulatory regimes under current circumstances), but there is no reason at all to expect any deterioration.

A more justified criticism of the approach adopted by countries such as the UK is that it will not actually permit full global mergers. For example, suppose KLM, Northwest and Alitalia merged completely to create a single company. Where would its 'principal place of business' be situated? In Detroit, Amsterdam or Milan, or all three? The problems associated with formal designation are obvious.

The ICAO Air Transport Regulation Panel has suggested that in assessing an airline's principal place of business a state should take into account whether the carrier has a substantial amount of its operations and capital investment in physical facilities in the designating country, pays income tax and registers its aircraft there, and employs a significant number of nationals in managerial, technical and operational positions. It has been suggested that, with the degree of regulatory flexibility of which states are certainly capable, these criteria could be met by changing 'the principal place of business' to 'a principal place of business', although it is not obvious that such a change would do justice to the English language.

In any event, even if reform is possible only on a bilateral basis, that reform is still well worth pursuing. It will produce substantial benefits in its own right. And once the concept of cross-border ownership has been accepted by a significant number of states, the step from a bilateral to a multilateral approach, which would certainly permit global mergers, will be all the easier. The probability must be that resistance to including the ownership and control of airlines in the General Agreement on Trade in Services (GATS), with its fundamental Most Favoured Nation principle, would soon evaporate. (Such an approach might initially focus on air cargo, as Frederik Sorensen of the EC has suggested. Air transport participation in GATS is scheduled to be reviewed in 2000.) Then at last air transport would be treated like any other mature industry.

Unstoppable momentum

The idea of reforming the traditional approach to airline ownership and control rules might appear superficially to be a radical step, and indeed it is in terms of the potential effect it will have on the industry, but the reality is that in large parts of the world a clear momentum is building up. That momentum reflects above all the commercial priorities of the major airlines, which individual states are unable to resist - even if they wanted to. Even the US will find it difficult to maintain its current protectionist policies in the context of such worldwide pressure, quite apart from the internal pressure it is facing to introduce more domestic competition.

Global airline alliances may be the future for the industry, but it does not follow that the current alliances bear more than a passing resemblance to the ones that will emerge when the ownership and control rules are reformed. The criteria used to pick a partner for a loose alliance will be very different from those applied when deciding to purchase another carrier or merge fully with it. The structure of the airline industry is still a long way from being finalised.

US regionals: recession-proof airlines?

US regional carriers such as SkyWest and Atlantic Coast Airlines caught everyone's attention in the late summer when their share prices continued to surge at a rate far outpacing the US market and in sharp contrast to the falls experienced by the major carriers. As purely domestic operators, their immunity from the Asian crisis was one obvious explanation. But analysts argue that the regionals could weather a downturn better than the major carriers. Why so, and who are the strongest candidates?

Over the past decade or so, the regional airline sector in the US has grown extremely rapidly, recording around 10% annual average growth in passenger traffic. The initial impetus came when the major carriers decided to start passing unprofitable lower-density short-haul routes to regional feeder partners, which could operate such routes profitably with turboprops and provide a high-frequency service. But the fastest growth rates - as high as 20-30% annually for some carriers - have been experienced over the past couple of years as the process of utilising regional jets has gathered pace.

The top dozen regional carriers in the US - American Eagle, Comair, Continental Express, Mesaba, Horizon, Atlantic Southeast (ASA), SkyWest, Mesa, Air Wisconsin, Atlantic Coast (ACA), Great Lakes and CCAIR - now account for 2-3% of industry capacity and around 7% of the total revenues.

US REGIONALS' FLEET PLANS

	Current fleet	Orders (options)	Delivery/retirement schedule/notes
Atlantic Coast Airlines			
CRJ	12	21	Delivery by 2001
Jetstream 32	28	0	
Jetstream 41	32	0	
TOTAL	**72**	**21**	
Atlantic Southeast Airlines			
Emb-110	2	0	
Emb-120	63	0	
ATR 72	12	0	
CRJ	13	57 (53)	Delivery by 2002
TOTAL	**90**	**57 (53)**	
Comair			
Emb-110	2	0	
Emb-120	31	0	
CRJ	67	63 (115)	Delivery by 2003
SA227	1	0	
TOTAL	**101**	**63 (115)**	
SkyWest Airlines			
Emb-120	82	10 (40)	Delivery by 1999
CRJ	10	(10)	
SA227	2	0	
TOTAL	**94**	**10 (50)**	
Mesa Airlines			
Beech 1900D	29	0	
DHC8	1	0	
CRJ	0	15	Delivery by 1999
TOTAL	**30**	**15**	

Consistent profits, high margins

Despite their rapid expansion, the regionals have also been consistently profitable, with excellent operating margins. According to Merrill Lynch, during the 1990-91 recession when the major airlines incurred $3.7bn of losses, ACA, ASA, Comair, Mesa and SkyWest reported a combined $157m operating profit, or 13% of total sales. In fact, since 1989 those five regionals have never failed to achieve a combined annual operating margin of at least 12%.

Analyses by BT Alex. Brown and Merrill Lynch also suggest that, like Southwest's, regional airline stocks outperform both the market and the rest of the industry during an economic downturn. Although the stocks initially fell due to fears in 1990, regional airline stocks rebounded quickly. Merrill found that the only exception was SkyWest, which remained profitable but reported a 40% decline in operating income in 1991.

But why would this industry sector be less vulnerable to recession? First, the regionals are more resilient to a demand downturn because they carry high volumes of business traffic: typically 60-70%, compared with the major carriers' 40%. Business travel tends to be more stable in a downturn.

Second, major carriers are likely to retrench from more markets during a downturn, which would lead to new growth opportunities for their regional partners. No-one is talking about further large-scale route transfers here, just the fact that more marginally profitable routes are likely to become loss-making for the Majors when GDP and demand growth weaken.

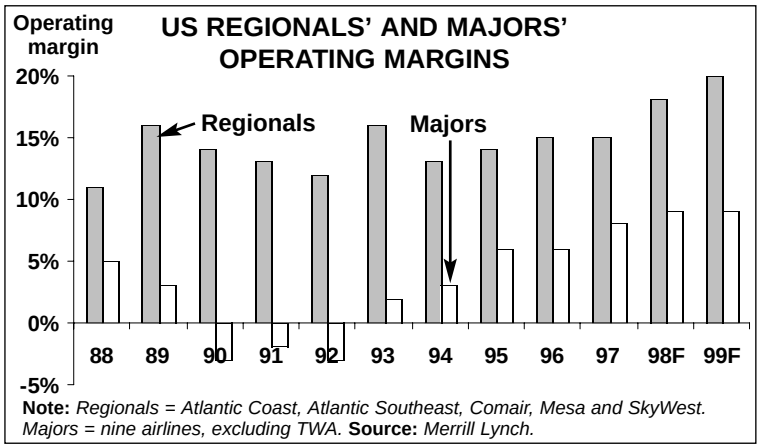
Regionals have the added advantage of operating in local markets that have little, if any, non-stop competition. Unlike some of the major carriers - which stand to lose traffic to aggressive low-cost competitors when more consumers, worried about their disposable incomes, start shopping for lower fares - the regionals enjoy a captive market on the relatively thin routes.

Lower cost levels also enhance the regional carriers' ability to withstand a downturn. They are generally not unionised. Their pilot salaries are typically only one quarter of the levels at major carriers ($30,000 annually, compared with $120,000). As a result, regionals like Comair need only a 42% load factor to break even, compared with typically at least 55% for the major airlines.

In contrast to the very limited domestic expansion opportunities for the major carriers, US regionals appear to have good growth prospects. BT Alex. Brown estimates that American Eagle, ACA, ASA, Comair, Mesaba and SkyWest will increase their combined seat capacity by 15.6% this year and 10% in 1999. Merrill Lynch forecasts 12% ASM growth this year and 14% in 1999 for its sample of five airlines (ACA, ASA, Comair, Mesa and SkyWest).

These growth rates are, of course, spurred by a rapid acquisition of 50-70 seat regional jets (RJs) to enhance the traditional 30-seat turboprop fleets. The first RJ entered service only five years ago (in the spring of 1993, with Comair), and the past year has seen its system-wide introduction in the US regionals.

The RJ has changed the character of the US regional airline industry just as fundamentally as the introduction of jets changed the major airlines in the early 1960s. The much longer range of the RJs (up to 1,900 miles, compared with 350 miles for the older turboprops) has opened up numerous new markets and is thoroughly reshaping traffic patterns. Whether used to replace or complement turboprops on existing routes or develop new longer-range markets, the RJs have provided a major capacity boost for the regionals.



Note: *Regionals = Atlantic Coast, Atlantic Southeast, Comair, Mesa and SkyWest. Majors = nine airlines, excluding TWA.* **Source:** *Merrill Lynch.*

The regional jet has led to significant productivity gains, lower costs and better service standards, while unit revenues have held up fairly well because of the lack of direct competition. Merrill Lynch estimates that the combination of "slightly lower unit revenues" and "significantly lower unit costs" (as much as 20% lower) has improved operating margins by up to 3-4 points.

The favourable cost and earnings trends will continue as the regionals add more RJs to their fleets. In mid-September American Eagle, ACA, ASA, Comair, Mesaba and SkyWest had a total of 118 aircraft on order for delivery in 1998 and 1999.

Major orders for the Embraer ERJ and Canadair CRJ from four US regionals at Farnborough in the UK ensured a continued high level of deliveries to the US regionals from 2000 onwards. These included a $2bn order from American Eagle for 75 of the 37-seat ERJ-135s plus 75 options, which will replace turboprops from July 1999 through 2004, and a $375m repeat order from Continental Express for 25 50-seat ERJ-145s. The CRJ orders came from ACA (for 10 aircraft) and from ASA for 12 of the 70-seat CRJ-700s.

Analysts believe that the industry will have no problem absorbing all that additional capacity. This is in part because the

regionals' capacity base is still relatively small, but also because the bulk of the aircraft are expected to be deployed to replace or complement existing jet or turboprop services. Bombardier's records indicate that only 29% of the RJs currently in service are used in the higher-risk activity of new route development.

In addition to being highly profitable, US regional carriers also have strong balance sheets. According to Merrill, they have an average debt/capitalisation ratio of 66%, compared with the major airline average of 80%. Most of the regionals have better total liquidity relative to their operating costs than the major carriers and take just as good care of their shareholders. At least ASA, Comair and SkyWest pay dividends and have share repurchase programmes in place. In late November Mesaba's board also authorised a $30m repurchase programme through December 1999.

The regionals make particularly attractive investments at present because of their relatively low current valuations and strong earnings growth prospects. Top-quality carriers like Comair, ASA, ACA, Mesaba and SkyWest are currently trading at 12-14 times 1999 projected earnings, which is 2-3 points lower than when their shares peaked in August. Yet, according to First Call, all of those carriers have projected annual long-term earnings growth rates of 15-22%. They are all rated as "buys" or "strong buys".

However, only those regionals that have solid codeshare relationships with the major carriers find themselves in that prestigious category. Mesa, which has lost several United Express contracts over the past year or so in large part because its service quality deteriorated, actually reported a net loss of 85 cents per share for its 1998 financial year ended September 30. Although the company is expected to return to profitability in the current financial year, the brokers reporting to First Call predict long-term earnings growth of only 12% and most have a "hold" recommendation on the stock.

US REGIONALS' LATEST FINANCIAL RESULTS

$m	Operating revenue		Operating result		Net result	
	3Q97	3Q98	3Q97	3Q98	3Q97	3Q98
AMR Eagle	*262.1	*304.0	NR	NR	NR	NR
Comair	162.9	195.0	39.2	52.9	24.5	34.6
SkyWest	80.3	113.5	12.2	19.5	NR	12.9
Atlantic Southeast	99.1	105.0	22.8	25.9	15.3	18.2
Horizon Air	84.9	97.7	7.0	10.2	NR	NR
Atlantic Coast	54.8	78.1	9.1	17.1	4.8	10.6
Mesaba	71.4	71.7	1.0	1.8	NR	2.1

Note: **Passenger revenue. NR = Not reported/available.*

Atlantic Southeast (ASA)

This Delta Connection carrier, which has successfully introduced a new fleet of RJs at Atlanta, is one of the highest-rated regional airline stocks. According to Merrill Lynch, it has one of the best airline balance sheets.

ASA's net earnings actually fell marginally in 1997, to $54.5m, due to after-tax charges related to the return of its fleet of five BAe 146s to the lessor and for training and start-up expenses related to the CRJ introduction. But earnings have improved since the fourth quarter of last year.

In August ASA finally secured pilot approval for a new four-year contract, which had been in negotiation for three years and had involved federal mediators. But costs will rise as the deal, among other things, gave the pilots a 30%-plus increase in total compensation in the first year of the contract.

ASA currently operates just 13 CRJ-200s, but continued deliveries will facilitate 24% capacity growth in 1999 and 19% in 2000. There are 45 CRJ-200s on firm order, plus 12 of the larger 70-seat CRJ-700s. Options are held on 53 additional aircraft. The CRJ-700 deliveries will begin in the fourth quarter of 2001.

Atlantic Coast (ACA)

ACA, which feeds to United along the East coast through Washington-Dulles, has been another analysts' favourite since becoming the first United Express carrier to secure the right to operate the RJ about a year ago. It also recently began feeding to United at Chicago.

One of the fastest-growing regionals, ACA expects its capacity to increase by 65% this year and 34% next year, thanks to the addition of 23 jets. The bulk of the new air-

craft will go to the Washington-Dulles hub. In October the 72-strong fleet included 12 CRJs. The jets are expected to account for half of the carrier's capacity by year-end and 75% by the end of 1999. Since exercising options on ten more CRJs in September, ACA expects to operate 33 CRJs by the second quarter of 2001.

Despite its rapid growth, ACA continues to perform well financially. Its operating profit surged by 88% to $17.1m (21.8% of revenues) and net profit more than doubled to $10.6m in the third quarter, amid signs that the regional jet is having major operational impact. The increase in average stage length (due to jets) led to 23% declines in both unit costs and yield, while the load factor rose by 4.1 points to 58.1%. In October ACA's flight attendants finally approved a four-year contract.

Comair

Delta Connection carrier Comair will go into the history books for pioneering regional jet operation in the US and for developing Cincinnati into an extremely profitable Midwest hub.

The airline's third-quarter results reflect its considerable financial strength. Operating profit rose by 35% to $52.9m, which represented 27% of revenues. Net profit rose by 41% to $34.6m (18% of revenues). The load factor improved by 3.3 points to 65.7%, which was 17 points above the break-even load factor of 48.7%.

Currently the largest RJ operator with a fleet of 67 aircraft, Comair is determined to retain its leading position by becoming the first regional carrier in the US to operate an all-jet fleet in 2001. It recently signed a $1bn deal with Bombardier to acquire 50 additional regional jets - 20 CRJ-700s and 30 CRJ-100s - plus 100-115 options, which will give it an eventual fleet of 245 RJs.

SkyWest

After feeding to Delta at Los Angeles and Salt Lake City for many years, SkyWest got its big break about a year ago when United signed it as an Express partner at Los Angeles following the termination of WestAir's contract. The two got on so well, with United repeatedly praising SkyWest's service quality, that since then co-operation has been expanded to San Francisco, Seattle and Portland. SkyWest is now the United Express operator along the West coast and the feeder services to the hubs have been substantially expanded.

Although SkyWest was one of the earliest RJ operators, its 69-strong fleet is still largely made up of turboprops. There are 10 RJs and another ten on option. But the carrier is still expected to achieve 25% ASM growth in 1999 and 15% the year after.

The Utah-based airline, which serves 50 cities in 13 western states and Canada, reported a 71% rise in net earnings to $12.8m on $113.5m revenues in the third quarter. Operating profit rose by 59% to $19.5m.

Mesa

Mesa's experience with United illustrated the downside of the regionals' dependency on codeshare relationships with the major carriers. After six or seven years of co-operation, over the past year Mesa and its sister carrier WestAir have lost their California, Pacific Northwest and Denver feeder contracts with United to SkyWest, Air Wisconsin and Great Lakes Aviation. The main reason appears to have been deterioration in Mesa's on-time performance and service quality, though there had also been disagreements about remuneration and Mesa's service reductions.

The loss of those contracts had significant impact since United Express operations represented about 45% of Mesa's total fleet and ASM capacity. But the latest reports indicate that, after losing money for eight consecutive quarters, the resilient regional was profitable in October and its cash situation is improving.

Mesa looks likely to recover because of its profitable and expanding regional jet operation for America West at Phoenix and US Airways along the East coast and in the Midwest. It recently strengthened its position in the east by acquiring Charlotte-based US Express operator CCAIR for about $60m.

By Heini Nuutinen

Sabena - Europe's first flag-carrier failure?

Of all the problems that could possibly face a European airline as it entered the 1990s - poor service, union unrest, low load factors, a diverse fleet, unprofitable short-haul, weak long-haul - Sabena faced the lot. As the millennium approaches, how far has Sabena progressed in overcoming these problems and ensuring its long-term survival?

When Pierre Godfroid was appointed president in of Sabena in 1990, the task he faced was immense. The Belgian government gave him three core targets - restructuring the airline, preparing the company for privatisation, and recapitalisation.

Godfroid initially made good progress. The 'Phoenix' restructuring plan cut the workforce by 3,500 to 9,500 by 1994, while in April 1992 Air France pumped BF6bn ($187m) into Sabena in return for a minority stake. The Belgian state 'invested' another BF9bn ($280m), increasing Sabena's capital from BF1.1bn to Bf16.1bn ($500m). Strategically, Godfroid regrouped the airline's activities into two major areas - Europe and Africa (where the airline has strong ties historically) - while in Europe a hub system was built up at Brussels in three waves per day

Yet Godfroid's efforts were not enough. In 1993 the airline plunged into loss (see graph, right) and Air France withdrew from Sabena in 1994, to be replaced by Swissair, which took a 49.5% stake in July 1994 (the Belgian government and other domestic investors hold the balance of the equity).

SABENA FLEET PLANS

	Current fleet	Orders (options)	Delivery/retirement schedule/notes
737-200	13	0	To be replaced by A319/20/21s
737-300	6	0	To be replaced by A319/20/21s
737-400	3	0	To be replaced by A319/20/21s
737-500	6	0	To be replaced by A319/20/21s
747-300	2	0	Leaving fleet in 1999
A319	0	26	Delivery in 1999-2001
A320	0	5	Delivery in 1999-2001
A321	0	3	Delivery in 1999
A330-200	1	5	1 in 1998, 4 in 1999
A330-300	3	0	On 10 year leases from 1997
A340-200	2	0	
A340-300	3	0	
MD-11	2	0	
DHC8	4	0	
TOTAL	**45**	**39**	

And so another optimistic era began for the airline. This time around, the goal was for Swissair/Sabena to become the third most important airline grouping in Europe by 2000 (after Lufthansa and British Airways).

To do that, however, meant breaking the power of the unions. In November 1995 the airline cancelled all labour agreements with unions, leading to immediate strike action. The dispute was inevitable given that Godfroid was determined to abolish the airline's salary indexation system (introduced in the 1960s) via a three year salary freeze, along with an increase in the working week from 38 to 40 hours. The carrot was another 1,000 jobs and a profit-share scheme worth 25% of the profits. But union uproar at the move and a damaging strike eventually led to the resignation of Godfroid. In April 1996 Swissair appointed Paul Reutlinger as his replacement.

Reutlinger's task was clearer than the one given to Godfroid - cut costs by BF4.7bn ($150m at the 1996 exchange rate) by 1998. Reutlinger's policy was unveiled in June 1996: he gave the unions three choices - a 12% salary reduction, 1,270 job losses, or revised work schedules. Any one of these would reduce labour costs by BF2bn ($64m). The other BF2.7bn ($86n) saving was to come via restructuring (i.e. fleet rationalisation, closing unprofitable routes, adding destinations, improving the brand, developing the Brussels hub, and even spinning off cargo and catering).

If these savings could be achieved, the airline would at least break even by 1998 - dubbed the Horizon 98 scenario. There are further ambitious targets of a 4% ROC in 1998, rising to 8% by 2000.

Not surprisingly, the unions were not happy with the choices they were given, but in October 1996 a deal was eventually agreed. Instead of implementing any one of the three choices in full, the agreement included parts of each - an average 2% salary decrease, the loss of 730 jobs via early retirement and voluntary redundancy, and some flexibility in working hours.

Whether this deal will deliver the projected BF2bn in savings in 1998 is difficult to judge. Productivity has risen significantly over the last few years (see chart, page 17), but productivity is a moving target. Benchmark European airlines such as BA are improving their productivity all the time, and Sabena seems destined always to be playing catch-up. For example, Sabena's workforce was still larger in 1997 than in 1994, and despite the job cuts an increase in ground handling staff means that Sabena's overall workforce will fall by just 300 in 1998.

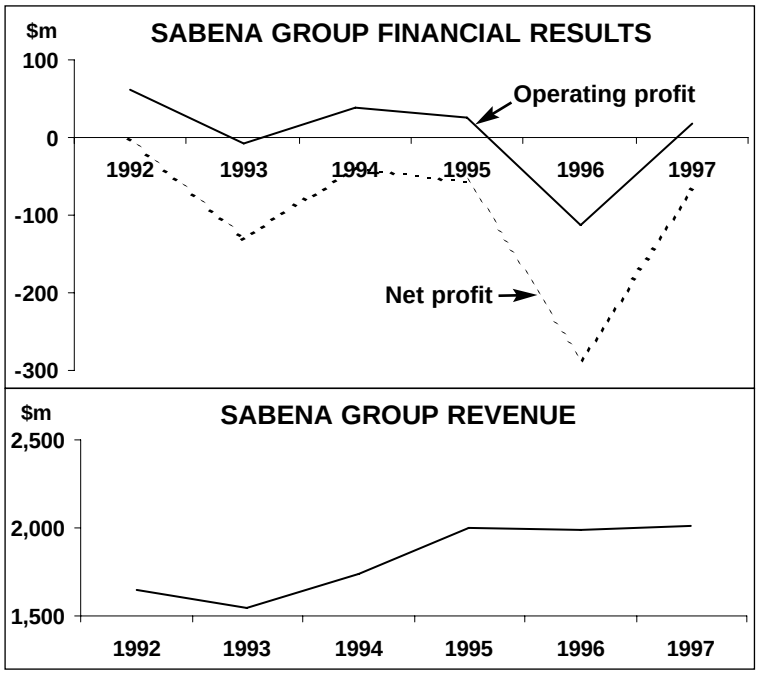
Other than labour, Reutlinger is still looking for BF2.7bn worth of cost savings in four key divisions - cargo, catering, ground operations and technical. Particular progress has been made in one area - fleet rationalisation.

Fleet progression

Sabena's efforts at fleet rationalisation are finally starting to take shape. On short-haul, 28 737s will be replaced directly by 28 A319/20/21s over 1999-2001, with another six A320 family aircraft being used for extra frequencies and new destinations. Unions originally objected to Sabena's plans to replace all Boeings in its fleet by 2000 (so ensuring fleet harmonisation with Swissair and Austrian) as they feared losing significant 737 maintenance work. However, Sabena's management promised that Airbus maintenance would be carried out by the airline's subsidiary Sabena Technics.

DC-10s and A310s have already left the widebody fleet, and the last two 747-300s will go in 1999. Three ex Air-Inter A330-300s arrived in 1997 - initially on five year leases, now extended to 10 years - and the A330-200 fleet will increase to six by the end of 1999. Along with A340s, the only other model in Sabena's fleet after 2000 will be the MD-11, two of which are wet-leased from Belgian charter airline CityBird (in which Sabena has a minority stake). Overall, the fleet will have an average age of four years by 2000.

Reutlinger's cost-cutting measures are now filtering through. There was still a BF2.5bn ($70m) net loss in 1997, but this was after exceptional charges of BF2.5bn. Turnover rose 16% in 1997, with a BF615m ($17m) operating profit. In the first-half of 1998 Sabena recorded a net profit of BF59m ($1.6m), boosted by a new five-wave system at the Brussels hub and extra long-haul



services. Yet cost-cutting alone (the latest round is called 'Fit for the Cycle') - even if it is successful in helping the airline to break-even in 1998 - may not be enough to secure Sabena's future.

Short-haul danger?

Central to Sabena's European strategy is the outsourcing of loss-making routes to low-cost carriers. In October 1996 Sabena handed over its nine-flights-a-day service on Brussels-London Heathrow to Virgin Express, via a wet-lease of 737-300s. This was followed by outsourcing or block booking deals with Virgin Express on Brussels to Barcelona, Rome/Fiumicino, London Gatwick and London Stansted. And from April 1997 Antwerp to London Heathrow services were taken over by VLM, an Antwerp-based regional.

Sabena's justification for the outsourcing is simply that these routes are loss-making - Brussels to London in particular has been affected by competition from Eurotunnel.

Sabena promised the airline's unions that it would limit co-operation with low-costs to these destinations, as long as the unions allowed these deals to go-ahead unhindered.

With the Virgin Express codesharing deals, Sabena sells only business class tickets, but both carriers compete for economy business. According to Sabena, the link with Virgin Express allowed Sabena to improve the bottom line by

BF394m ($11m) in 1997. So although Reutlinger says that the Virgin Express tie-ups have resulted in losing high-yield business class passengers to competitors on the VE routes, that has been more than made up by lower costs and extra economy passengers via increased frequencies and lower fares.

This appears to be a dangerous strategy. If basic profitability on trunk routes was such a problem for Sabena in the first place (and London is Sabena's most important route) then something was seriously wrong with the airline's operations.

For Virgin Express, the Sabena deal has also proved problematical, as it has had to face the same union and cost problems that Sabena faced. And liaison between VE's American management and Sabena's Belgian executives has not been perfect either. On the other hand, Virgin does now have a stranglehold on some key passenger feed for Sabena. Furthermore, the loss of business-class passengers will impact long-term on Sabena's profitability as they switch to other airlines' long-haul flights.

How Sabena believes it can maintain any kind of business-class brand while asking executives to fly on low-cost feeder airlines is difficult to comprehend. In 1997 overall traffic at Sabena increased by 30% - but economy rose by 39.8%, and business by just 7.5%, so overall yield was hit. The problem for Sabena is that it does not have a substantial long-haul network that can provide a steady stream of profits to make up for short-haul losses. Although Sabena is building up its long-haul routes, in the short- and medium-term it has no alternative but to try and make a small margin on short-haul, or at least scale back losses. This has been achieved by short-haul outsourcing. But this a short-sighted strategy on Sabena's part because although it helps achieve the short-term goal of breaking even, the disadvantages of outsourcing - the loss of key business feed - will impact severely on the airline's long-term future.

JANUARY-JUNE 1998 RESULTS BY DIVISION

	Revenue	Operating profit	Operating margin
Sabena	$1,081.0m	$12.8m	1.2%
Sobelair	$85.5m	-$2.3m	-2.7%
DAT	$60.5m	$3.6m	6.0%
BFSC*	$4.2m	$0.4m	9.5%
Hotels	$5.8m	$1.2m	20.7%
Others**	$6.3m	$6.3m	100.0%
Intra-group	-$96.3m	-$20.5m	n.a.
TOTAL	**$1,147.0m**	**$1.6m**	**0.1%**

Note: **Belgian Fuelling and Services Company. **Includes Sabena Interservice Center - group finance division*

The long-haul gap

European traffic accounts for 85% of Sabena's total traffic, and its long-haul network lags well behind that of its major European rivals. The exception is Africa, where Sabena serves 17 destinations, making it Europe's top carrier to that continent. Elsewhere the long-haul network is sparse - a handful of destinations in North/South America (Sabena codeshares with Delta to/from Atlanta, New York, Boston and Chicago, and with regional airline Comair to seven mid-west US destinations) and a few in the Asia/Pacific region.

In November 1997 Sabena bought a 11.2% in Belgian start-up CityBird, which now operates some long-haul routes for Sabena. But although Sabena has an option to increase its stake in CityBird to 25%, CityBird's operations are also a signal to others that there is plenty of scope for new long-haul services out of Brussels.

Sabena did increase long-haul capacity by 11% in 1997, and further routes are planned - particularly to India and China - but the long-haul network will remain weak for some time yet.

Some compensation for Sabena's long-haul weakness is the Brussels hub - its key asset - at which the airline has an estimated market share of 42%. Sabena serves the hub with five waves of flights per day, and has introduced a 'Minimum Connect Time' of 30 minutes. (Delta Air Transport, Sabena's regional subsidiary, plays a major role at Brussels.)

But other European Majors are eyeing Brussels too, particularly for its substantial business class flow. If other airlines followed CityBird's example on long-haul and Virgin Express's example on short-haul, Sabena would be hard-pressed to maintain its share at the Brussels hub. Yet Sabena's future is tied to Brussels, even if Belgium has high tax rates and social charges (estimated at 30% of salary costs).

Has restructuring gone far enough?

The key question for Sabena is whether the changes implemented by Reutlinger will be

enough to turn the airline around? Despite all the good work on fleet restructuring and cost-cutting, Sabena is still faced with the problem that Belgium is a high cost base for any airline to operate in.

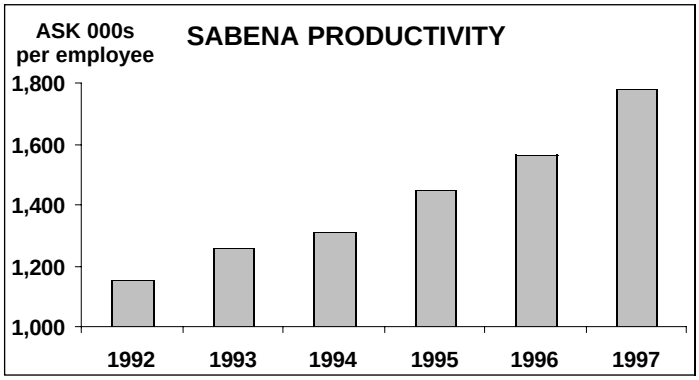
That's why Sabena would like to base its pilots and flight attendants in Switzerland. Although planned for 1998, it hasn't happened so far - but if Sabena could somehow achieve this relocation of 2,400 out of Sabena's 9,800 staff, costs would be cut by an estimated BF1.5bn ($40m) a year. This is likely to make all the difference as to whether Sabena can break even or not before the millennium.

A realistic assessment, however, is that although the relocation is vital, Reutlinger's plans are unlikely to succeed. A previous attempt by former president Godfroid to relocate pilots to Luxembourg failed, and unions are likely to resist the current plan unless they either receive something in return (which defeats the object of the relocation in the first place) or the airline is in severe danger of going under (unlikely, from the unions' viewpoint, with Swissair as the virtual majority shareholder).

And questions surely must be asked as to whether Switzerland gives much of a cost advantage over Belgium anyway? According to AEA data, social charges as a percentage of total pilot labour costs are about the same in Switzerland as Belgium, while salary and social charges as a percentage of total pilot labour costs are an estimated 30% higher in Switzerland than in Belgium.

Swissair's stake in Sabena, and hence its wishes, are key. If Sabena is unlikely ever to contribute substantial profits in its own right - and some analysts argue that if it cannot make a profit in the current stage of the cycle, it never will - then its fate lies in its role within the Swissair/Delta axis.

Via Atlantic Excellence, launched in February 1997, Delta, Swissair and Sabena carry out integrated North Atlantic operations, with a revenue pool and access to all partner airlines' seats. But this begs the question - what is in this alliance for Swissair and Delta? Although SAirGroup took over the marketing of Sabena's (substantial) cargo capacity in January 1997, perhaps Sabena's ultimate fate is to become the European short-haul specialist for Swissair and Delta. But is that likely if Sabena farms out key short-haul routes to Virgin Express and others? By handing the operation of key routes to/from the Brussels hub to low-cost airlines, Sabena has, in effect, surrendered valuable business class feed - which is surely the most valuable contribution Sabena could make to Swissair/Delta.



Of course Sabena can also offer its African network, but it is the Brussels hub that will be the key to Sabena's future. If Sabena cannot keep a grip on vital business class feed for itself and/or alliance partners, its fate will decided, with or without successful cost-cutting.

Swissair may increase its stake in Sabena to 67% (by acquiring 17.5% from the Belgian government) if Switzerland joins the EU bilateral (as a non-EU based airline Swissair cannot otherwise gain full control). Reutlinger is reputed to operate Sabena relatively independently of Swissair, but that could all change if Swissair gains majority control. In particular, if Delta and Air France ally, then Swissair may prefer to jump ship and join the oneworld camp. This would leave Sabena in an awkward position.

A pointer to the future came in September 1998 when Sabena announced a new corporate structure, to be introduced from January 1999. There will be three business units - Airline, Brussels Hub (which includes ground and cargo handling) and Technics; and two main subsidiaries - regional airline DAT and charter carrier Sobelair. Each business unit will be given more operational accountability, and financial performances will be comparable.

This restructuring is a clear signal to the business unions to get their costs in order - but it also opens the way for clean and easy sales of one or more of the units in the future. One scenario is that when Swissair gains absolute control Technics could be sold off while the Airline business unit could be split, with some parts such as the African long-haul routes and key European feed routes being merged into Swissair.

Just how efficient are Europe's hubs?

In the second of two articles on hubbing, Dr Nigel Dennis, senior research fellow at the University of Westminster's Transport Studies Group, looks at the prospects for European hubs.

While all the US Majors have built up networks of hubs to cover the main traffic flows in the region, in Europe national boundaries have tended to obstruct this type of arrangement and airlines have ended up dominating several airports in close proximity in their home country - e.g. BA at Heathrow, Gatwick, Manchester and Birmingham; and Lufthansa at Frankfurt, Dusseldorf and Munich. This is less efficient from a competition viewpoint and these operations may be defensive in nature (i.e. to block another carrier from getting in). However, the emphasis may be changing through the creation of alliances that can reach new markets - e.g. Swissair is building links with Sabena and Austrian to extend its influence into northern and eastern Europe while running down Geneva operations, which parallel those at Zurich. The poor performance of secondary European hubs demonstrates the advantage to airlines in concentrating services on the major airports.

BA's investments in TAT/Air Liberte and Deutsche BA have the potential to increase competition by offering an alternative to entrenched national carriers. Although EU domestic services were deregulated from April 1997, it remains difficult to set up a hub in another country because the most lucrative long-haul services are still controlled by bilaterals. BA's attempt to feed Air Liberte at Orly with long-haul alliance partners services (e.g. American) looks about to be thwarted by the French government forcing all long-haul routes to CDG - where, of course, Air France is impregnable.

Hubs offer the major airlines one of the stronger defences against low-cost new entrants. Contrary to popular opinion, most of the heavily dominated hubs in the US have been left alone by the low-cost carriers. For example Denver has been avoided by Southwest despite lying in the middle of its home territory and Northwest has a virtually clear run at Minneapolis, as does US Airways at Pittsburgh. The new entrants tend to focus on either dense local markets, often using a secondary airport (e.g. Baltimore for Washington, Oakland for San Francisco) and/or the busier non-hubs e.g. Kansas City, Omaha.

The scope for new entrants in Europe is more limited: shortages of capacity coupled with high airport charges make opportunities scarcer. It is also rare to find the abandoned inner city airports that have been used so successfully in the US (e.g. Dallas Love Field and Chicago Midway). At London, for example, low-cost airlines have been obliged to use Luton or Stansted, which pushes up surface access costs and travel times.

Performance of European hubs

The Transport Studies Group has carried out research over the last 10 years into the performance of the major European airlines and hubs and some of this work is summarised below.

The wave concept which has been deployed to devastating effect in the US is less well developed in Europe. KLM at Amsterdam is one of the better examples with three principal waves (0800-1000 hours, 1200-1400 and 1800-2000). There is an emerging fourth wave at 1430-1630. Heathrow in contrast has almost a uniform distribution of flights, as one runway is used for departures and one for arrivals and BA has about 38% of slots in each time period. This has a negative impact on connectivity and makes it difficult to develop any systematic method for interlinking services because the timetable is not symmetric.

Although a wave pattern is more critical at the small- and medium-sized hubs where frequencies are low, even at the major hubs their theoretical advantage can rapidly be eroded without this. In particular, a wave arrangement is necessary to

SCHEDULE CONNECTIVITY

Hub	Connectivity ratio
Schiphol (KLM)	1.8
Brussels (Sabena)	1.8
Frankfurt (Lufthansa)	1.6
Paris CDG (Air France)	1.4
Rome (Alitalia)	1.2
Heathrow (British Airways)	1.0
Madrid (Iberia)	0.9

ensure convenient connections on a round trip basis as most passengers wish to make a return journey. With a random schedule pattern, many connections will require a change of airlines (e.g. a passenger arriving at Heathrow on BA from Seattle is equally likely to find the first connection to Frankfurt to be on Lufthansa or BA). This breaks the 'seamless service' concept and pricing may be unattractive to anything other than full fare passengers. Alternatively, passengers may have to wait hours for a connection on the same airline. It is therefore inevitably the main airline at hubs (plus feeder partners) that has the motivation to re-organise its schedules in this way.

The table (below left) analyses to what extent flights are concentrated into waves at the major hubs (a connectivity ratio of 1 indicates the scheduling is no better than random, whereas 2 creates twice as many linkages and most US hubs would be closer to a figure of 3).

KLM at Amsterdam, Sabena at Brussels and Lufthansa at Frankfurt stand out as having reasonably well co-ordinated schedules; Swissair at Zurich is the other good example along with one or two of the smaller hubs, such as Vienna. Air France has recently moved towards a wave pattern with a major investment in airport facilities by ADP to improve CDG's position as a hub airport. BA, Alitalia and Iberia have little more than a random pattern of movements through the day.

The table (right) analyses airlines providing the fastest routings through European hubs. It considers not just transfer times (which is relatively easy to calculate), but takes into account the entire journey time from origin to destination (i.e. it also considers the speed of aircraft - jet versus turboprop - and, most importantly, the circuitry in routing via different hubs). For this table schedules in 40 city pairs (Europe-long-haul) without direct service have been ranked by overall journey time for travel on January 15th 1998. These were chosen to give a good geographical spread around Europe and the world in relation to the patterns of demand. None of the end points is a major European hub so that all hubs have comparable opportunity to compete for this traffic.

Several rules were created for this analysis. Linkages had to satisfy the published IATA Minimum Connect Times (MCTs) but were compiled with reference to all flights of all scheduled carriers, not merely connections published or listed in the OAG. Only connections between non-stop flights were considered. Services requiring a wait of more than six hours at the transfer point were discarded and this also eliminated any connections requiring a night stop. Only results for on-line or codeshare services of the major carriers at each airport are presented here.

An airline that provided the fastest routing in every sample market would receive a score of 100%. If an airline has no service in a particular market it scores zero. The table below shows that Lufthansa is in the lead due to the combination of its extensive network and fast connections. Air France and KLM are close behind. Swissair, despite having much thinner long-haul services, narrowly overtakes BA due to fast schedules and a strong performance in southern Europe where other hub options are poor. This also demonstrates the importance of scheduling and MCTs. Air France is the major improver since 1995 while BA at Heathrow has slipped badly. This is because Heathrow's services have not increased over this time in the way that has been possible at the other major airports. Indeed, some thin routes have been relegated to Gatwick and although high frequencies and multiple daily connections are possible on some of the trunk markets, only the best service on the chosen day counts towards the score. The 'second division' of hubs includes Lufthansa at Munich, scoring 13% (up from only 1% in 1995), and Sabena at Brussels with 15%. A wide variety of airlines can provide service in one or two markets only - e.g. Iberia is worth considering for Latin America but rarely otherwise. Although these results are subject to sample variations, the five major hubs appear to be well ahead of the rest. The ranking of the smaller hubs is somewhat affected by the limited sample of markets chosen but none shows any particular flair.

AIRLINES PROVIDING FASTEST ROUTINGS THROUGH HUBS, 1998

	Score	Rank in 1995
Lufthansa (Frankfurt)	63%	1
Air France (Paris CDG)	60%	4
KLM (Schiphol)	59%	3
Swissair (Zurich)	50%	5
British Airways (Heathrow)	47%	2
Sabena (Brussels)	15%	10
Alitalia (Rome)	14%	6
British Airways (Gatwick)	13%	7
Lufthansa (Munich)	13%	14
All others	<10%	

EUROPEAN SCHEDULED TRAFFIC

	Intra-Europe			North Atlantic			Europe-Far East			Total long-haul			Total international		
	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 %
1991	114.8	65.2	56.8	120.9	84.3	69.7	80.0	53.1	66.4	267.6	182.0	68.0	397.8	257.9	64.7
1992	129.6	73.5	56.7	134.5	95.0	70.6	89.4	61.6	68.9	296.8	207.1	69.8	445.8	293.4	65.8
1993	137.8	79.8	57.9	145.1	102.0	70.3	96.3	68.1	70.7	319.1	223.7	70.1	479.7	318.0	66.3
1994	144.7	87.7	60.6	150.3	108.8	72.4	102.8	76.1	74.0	334.0	243.6	72.9	503.7	346.7	68.8
1995	154.8	94.9	61.3	154.1	117.6	76.3	111.1	81.1	73.0	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
Sep 98	16.3	11.5	70.6	17.6	14.9	84.6	11.4	9.0	79.2	39.3	32.2	81.8	58.3	45.6	78.1
Ann. chng	6.9%	8.7%	1.1	8.2%	9.6%	1.1	3.8%	6.2%	1.8	7.1%	8.9%	1.3	7.2%	8.8%	1.2
Jan-Sep 98	141.3	92.0	65.1	145.3	114.6	78.9	101.6	75.6	74.4	338.7	260.4	76.9	503.1	367.5	73.0
Ann. chng	7.4%	9.0%	0.9	9.0%	8.0%	-0.7	5.5%	4.0%	-1.1	8.2%	7.3%	-0.6	8.1%	7.7%	-0.3

Source: AEA.

US MAJORS' SCHEDULED TRAFFIC

	Domestic			North Atlantic			Pacific			Latin America			Total international		
	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 %
1990	863.1	523.2	60.6	121.3	84.2	69.4	106.7	75.8	71.0	42.2	26.6	63.0	270.2	186.5	69.0
1991	835.1	512.7	61.4	108.0	75.2	69.6	117.0	78.5	67.1	44.3	27.4	61.8	269.2	181.0	67.2
1992	857.8	536.9	62.6	134.4	92.4	68.7	123.1	85.0	69.0	48.0	27.4	57.0	305.4	204.7	67.0
1993	867.7	538.5	62.1	140.3	97.0	69.2	112.5	79.7	70.8	55.8	32.5	58.2	308.7	209.2	67.8
1994	886.9	575.6	64.9	136.1	99.5	73.0	107.3	78.2	72.9	56.8	35.2	62.0	300.3	212.9	70.9
1995	900.4	591.4	65.7	130.4	98.5	75.6	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
Sep 98	75.8	52.2	75.9										26.8	20.4	75.9
Ann. chng	-3.4%	1.9%	3.5										-6.5%	-8.9%	-2.0
Jan-Sep 98	716.8	511.7	71.4										260.8	192.7	73.9
Ann. chng	0.2%	2.1%	1.4										5.0%	2.7%	-1.6

Note: US Majors = American, Alaska, Am. West, Continental, Delta, NWA, Southwest, TWA, United, USAir. **Source:** Airlines, ESG.

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 %
1991	1,267	800	63.2	1,487	998	67.1	2,754	1,798	65.3	-0.3	0.6	-2.6	-6.1	-1.6	-3.2
1992	1,300	840	64.6	1,711	1,149	67.2	3,011	1,989	66.1	2.7	5.0	15.0	15.2	9.4	10.7
1993	1,347	856	63.6	1,790	1,209	67.5	3,137	2,065	65.8	3.6	1.9	4.6	5.2	4.2	3.8
1994	1,403	924	65.8	1,930	1,326	68.7	3,333	2,250	67.5	4.2	7.9	7.8	9.7	6.3	9.0
1995	1,477	980	66.3	2,044	1,424	69.7	3,521	2,404	68.3	5.3	6.1	5.9	7.4	5.6	6.9
1996	1,526	1,046	68.6	2,163	1,537	71.1	3,689	2,583	70.0	3.3	6.7	5.8	7.9	4.8	7.4
1997	1,617	1,102	68.2	2,387	1,704	71.4	4,004	2,807	70.1	4.6	5.5	7.6	9.1	6.4	7.7
***1998**	1,624	1,122	69.1	2,470	1,751	70.9	4,094	2,873	70.2	0.4	1.8	3.5	2.7	2.3	2.4
***1999**	1,675	1,155	69.0	2,586	1,833	70.9	4,261	2,988	70.1	3.2	3.0	4.7	4.7	4.1	4.0
***2000**	1,738	1,194	68.7	2,729	1,930	70.7	4,467	3,124	69.9	3.7	3.3	5.5	5.3	4.8	4.5
***2001**	1,791	1,218	68.0	2,857	2,004	70.1	4,648	3,222	69.3	3.1	2.0	4.7	3.8	4.0	3.1
***2002**	1,806	1,210	67.0	2,916	2,015	69.1	4,722	3,225	68.3	0.8	-0.7	2.1	0.6	1.6	0.1
***2003**	1,857	1,273	68.5	3,066	2,165	70.6	4,923	3,437	69.8	2.9	5.2	5.1	7.4	4.3	6.6

Note: * = Forecast; ICAO traffic includes charters. **Source:** Airline Monitor, July 1998.

DEMAND TRENDS (1990=100)

	Real GDP					Real exports					Real imports				
	US	UK	Germany	France	Japan	US	UK	Germany	France	Japan	US	UK	Germany	France	Japan
1991	99	98	101	101	104	106	99	112	104	105	99	95	113	103	97
1992	102	98	102	102	105	113	103	112	109	110	107	101	115	104	96
1993	105	100	100	101	105	117	107	106	109	112	117	104	108	101	96
1994	109	103	103	104	106	126	117	115	115	117	131	110	117	107	104
1995	111	106	105	106	107	137	126	122	123	123	141	115	124	113	119
1996	114	108	107	107	111	152	135	128	128	126	155	124	127	116	132
1997	118	112	110	109	112	172	146	142	142	138	177	135	136	123	132
***1998**	121	113	113	113	112	180	154	155	154	145	200	148	146	133	130
***1999**	124	115	116	116	113	189	160	166	163	155	219	156	156	141	133

Note: * = Forecast; Real = inflation adjusted. **Source:** OECD Economic Outlook, June 1998.

COST INDICES (1990=100)

	Europe						US					
	Unit revenue	Unit op. cost	Unit lab. cost	Efficiency	Av. lab. cost	Unit fuel cost	Unit revenue	Unit op. cost	Unit lab. cost	Efficiency	Av. lab. cost	Unit fuel cost
1991	106	109	103	105	108	88	100	102	102	101	103	84
1992	99	103	96	119	114	80	98	100	101	107	108	75
1993	100	100	90	133	118	82	101	98	99	116	115	67
1994	100	98	87	142	123	71	98	94	101	124	125	62
1995	99	97	86	151	128	67	99	93	98	129	127	61
1996	100	101	88	155	135	80	102	94	98	129	126	72
1997	102	105	85	148	131	81	104	94	100	129	129	69
***1998**	107	105	84	151	127	71	108	96	106	127	134	61

Note: * = First-half year. European indices = weighted average of BA, Lufthansa and KLM. US indices = American, Delta, United and Southwest. Unit revenue = airline revenue per ATK. Unit operating cost = cost per ATK. Unit labour cost = salary, social charges and pension costs per ATK. Efficiency = ATKs per employee. Average labour cost = salary, social costs and pension cost per employee. Unit fuel cost = fuel expenditure and taxes per ATK.

FINANCIAL TRENDS (1990=100)

	Inflation (1990=100)						Exchange rates (against US$)						LIBOR
	US	UK	Germany	France	Japan		UK	Germ.	France	Switz.	ECU	Japan	6 month Euro-$
1990	100	100	100	100	100	**1990**	0.563	1.616	5.446	1.389	0.788	144.8	8.27%
1991	104	106	104	103	103	**1991**	0.567	1.659	5.641	1.434	0.809	134.5	5.91%
1992	107	107	109	106	105	**1992**	0.570	1.562	5.294	1.406	0.773	126.7	3.84%
1993	111	109	114	108	106	**1993**	0.666	1.653	5.662	1.477	0.854	111.2	3.36%
1994	113	109	117	110	107	**1994**	0.653	1.623	5.552	1.367	0.843	102.2	5.06%
1995	117	112	119	112	107	**1995**	0.634	1.433	4.991	1.182	0.765	94.1	6.12%
1996	120	114	121	113	107	**1996**	0.641	1.505	5.116	1.236	0.788	108.8	4.48%
1997	122	117	123	114	108	**1997**	0.611	1.734	5.836	1.451	0.884	121.1	5.85%
***1998**	123	119	125	116	109	**Nov 1998**	0.602	1.705	5.716	1.409	0.866	121.9	5.13%**
***1999**	126	122	127	117	109								

Note: * = Forecast. **Source:** OECD Economic Outlook, June 1998. ** = $ LIBOR BBA London interbank fixing six month rate.

LEASE RATES

	Year	Rate ($000)		Year	Rate ($000)		Year	Rate ($000)
727-200HADV	1971-83	55-110	767-200ER	1985-92	340-385	MD11	1990-98	610-760
737-200HADV	1971-87	55-110	767-300	1986-96	365-490	A319	1996-98	260-290
737-300	1984-98	220-290	767-300ER	1988-98	570-725	A320-200	1988-98	285-335
737-400	1988-98	240-305	777-200B	1996-98	815-880	A321-200	1997-98	350-375
737-500	1990-98	205-260	DC8-71F	1968-71	160-205	A300B2-200	1976-82	80-110
737-600	1998	280-300	DC9-30H	1967-81	50-90	A300B4-200	1975-84	120-165
737-700	1997-98	290-320	DC10-10	1970-78	85-110	A300-600	1985-92	330-360
737-800	1998	330-360	DC10-30	1972-82	220-310	A300-600R	1987-97	345-465
757-200	1982-98	290-380	DC10-40	1972-76	95-120	A310-300	1985-97	285-445
757-200ER	1988-98	335-415	MD81	1979-92	150-215	A330-300	1994-98	695-795
747-200B	1971-87	150-400	MD82	1981-95	175-230	A340-300	1993-98	730-820
747-200SF	1971-87	250-420	MD83	1985-97	190-260	BAe 146-200	1984-93	140-160
747-300	1983-89	440-485	MD87	1987-93	165-195	RJ70	1993-98	160-185
747-400	1989-98	745-1,000	MD88	1987-97	195-260	RJ85	1993-98	170-200
767-200	1981-90	245-285	MD90	1995-98	280-310	F100	1987-96	150-180

Source: The Aircraft Value Analysis Company. **Note:** These monthly rates are based on a medium credit, average (half-life) return conditions and an average lease term (differing for type of aircraft).

JET AND TURBOPROP ORDERS

	Date	Buyer	Order	Price	Delivery	Other information/engines
ATR	Nov 16	Air New Zealand	7 ATR 72-500s		4Q99-1Q00	For subsidiary Mount Cook Airline
Airbus	Nov 4	GB Airways	9 A320 family		01-03	+ 5 options
BAe	-					
Boeing	Nov 23	Britannia Airways	2 737-800s		00	+ 2 options
	Nov 23	Continental AL	10 767-200ERs			
Bombardier	Nov 19	BWIA	2 Dash 8-Q300s	$27.2m	1Q99	+ 2 options
	Nov 9	Amakusa Airlines	1 Dash 8-Q100		4Q99	
Embraer	-					
Fairchild Dornier	-					

Note: Prices in US$. Only firm orders from identifiable airlines/lessors are included. MoUs/LoIs are excluded. **Source:** Manufacturers.

	Group revenue US$m	Group costs US$m	Group operating profit US$m	Group net profit US$m	Total ASK m	Total RPK m	Load factor %	Group rev. per total ASK Cents	Group costs per total ASK Cents	Total pax. 000s	Total ATK m	Total RTK m	Load factor %	Group employees
American*														
Jan-Mar 97	4,006	3,782	224	152	62,059.4	41,676.0	67.2	6.46	6.09	19,363	9,283.2	4,848.4	52.2	86,246
Apr-Jun 97	4,292	3,812	480	302	64,026.0	45,012.1	70.3	6.70	5.95	20,697	9,482.2	5,241.2	55.3	87,248
Jul-Sep 97	4,377	3,868	509	323	65,093.0	46,943.3	72.1	6.72	5.94	21,343	9,637.3	5,406.0	56.1	87,793
Oct-Dec 97	4,228	3,871	357	208	63,308.3	42,715.7	67.5	6.68	6.11	19,681	9,366.9	5,025.2	53.6	88,302
Jan-Mar 98	4,223	3,798	425	290	62,405.4	41,846.6	67.1	6.77	6.09	19,267	9,207.0	4,889.4	53.1	87,569
Apr-Jun 98	4,491	3,885	606	409	64,471.8	46,075.9	71.5	6.97	6.03					87,250
Jul-Sep 98	4,583	3,958	625	433	65,920.1	48,093.9	73.0	6.95	6.00					
America West														
Jan-Mar 97	475	442	33	14	9,318.8	6,408.6	68.8	5.10	4.74	4,590	1,168.8	686.7	58.8	11,422
Apr-Jun 97	478	427	51	23	9,410.5	6,668.9	70.9	5.08	4.54	4,674	1,180.1	712.8	60.4	11,690
Jul-Sep 97	462	425	37	18	9,623.6	6,779.9	70.5	4.80	4.42	4,692	1,205.8	724.3	60.1	11,506
Oct-Dec 97	473	432	41	20	9,573.7	6,219.9	65.0	4.94	4.51	4,375	1,200.4	670.1	55.8	11,232
Jan-Mar 98	483	434	49	25	9,408.0	5,851.4	62.2	5.13	4.61	4,149	1,180.7	630.2	53.4	11,329
Apr-Jun 98	534	457	77	41	9,787.8	6,899.1	70.5	5.46	4.67	4,643				11,810
Jul-Sep 98	499	453	46	22	9,884.3	7,108.3	71.9	5.05	4.58	4,665				
Continental														
Jan-Mar 97	1,698	1,552	146	74	25,478.4	17,526.9	68.8	6.66	6.09	9,739	2,820.6	1,790.5	63.5	33,766
Apr-Jun 97	1,786	1,555	231	128	26,530.9	19,186.1	72.3	6.73	5.86	10,462	3,032.6	1,996.8	65.8	34,672
Jul-Sep 97	1,890	1,683	207	110	28,462.1	20,982.1	73.7	6.64	5.91	10,822	3,331.3	2,206.5	66.2	35,630
Oct-Dec 97	1,839	1,707	132	73	28,278.6	19,400.1	68.6	6.50	6.04	10,188	3,381.1	2,140.0	63.3	37,021
Jan-Mar 98	1,854	1,704	150	81	28,199.8	19,427.5	68.9	6.57	6.04	10,072	3,372.4	2,134.4	63.3	37,998
Apr-Jun 98	2,036	1,756	280	163	29,891.1	22,007.2	73.6	6.81	5.87	11,261				38,850
Jul-Sep 98	2,116	1,973	143	73	31,609.9	24,049.4	76.1	6.69	6.24	11,655				
Delta														
Jan-Mar 97	3,420	3,074	346	189	54,214.1	37,334.2	68.9	6.31	5.67	24,573	7,489.7	4,354.8	58.1	67,851
Apr-Jun 97	3,541	3,022	519	301	55,604.5	41,457.2	74.6	6.37	5.43	26,617	7,777.3	4,798.9	61.7	69,118
Jul-Sep 97	3,552	3,121	431	254	57,424.7	42,783.2	74.5	6.19	5.43	26,478	8,112.8	4,946.2	61.0	69,502
Oct-Dec 97	3,433	3,101	332	190	56,177.4	38,854.9	69.2	6.11	5.52	25,464	7,941.4	4,639.6	58.4	69,982
Jan-Mar 98	3,389	3,053	336	195	54,782.3	39,602.7	68.7	6.19	5.57	24,572	7,766.6	4.448.9	57.3	71,962
Apr-Jun 98	3,760	3,165	595	362	57,175.5	43,502.6	76.1	6.58	5.54					75,000
Jul-Sep 98	3,802	3,250	552	327	59,017.9	45,242.3	76.7	6.44	5.51					
Northwest														
Jan-Mar 97	2,376	2,241	135	65	37,102.1	26,702.1	72.0	6.40	6.04	12,661	5,800.7	3,471.3	59.8	47,628
Apr-Jun 97	2,558	2,267	291	136	38,985.3	29,195.9	74.9	6.56	5.82	13,780	6,175.7	3,817.3	61.8	48,025
Jul-Sep 97	2,801	2,298	504	290	41,491.3	32,231.1	77.7	6.75	5.54	14,743	6,587.3	4,189.3	63.6	47,843
Oct-Dec 97	2,491	2,264	227	105	38,465.5	27,791.0	72.2	6.48	5.89	13,383	6,247.0	3,820.5	61.2	48,852
Jan-Mar 98	2,429	2,272	156	71	38,260.1	27,038.2	70.7	6.35	5.94	12,704	6,052.7	3,513.4	58.0	49,776
Apr-Jun 98	2,476	2,356	120	49	38,332.7	29,533.7	77.0	6.46	6.15					51,332
Jul-Sep 98	1,928	2,204	-276	-224	32,406.3	24,295.8	75.0	5.95	6.80					
Southwest														
Jan-Mar 97	887	800	87	51	16,926.0	10,513.6	62.1	5.24	4.73	12,046	2,163.7	1,097.2	50.7	23,980
Apr-Jun 97	957	800	156	94	17,672.1	11,288.4	63.9	5.42	4.53	12,722	2,264.0	1,180.6	52.1	24,226
Jul-Sep 97	997	845	152	93	18,494.3	12,176.9	65.8	5.39	4.57	13,019	2,362.1	1,274.1	53.9	24,273
Oct-Dec 97	975	847	128	81	18,501.4	11,654.2	63.0	5.27	4.58	12,612	2,361.5	1,222.6	51.8	24,454
Jan-Mar 98	943	831	112	70	18,137.1	11,102.3	61.2	5.20	4.58	11,849	2,304.2	1,161.6	50.4	24,573
Apr-Jun 98	1,079	870	209	133	18,849.6	13,236.7	70.2	5.72	4.62	13,766				24,850
Jul-Sep 98	1,095	891	204	130	19,762.1	13,620.3	68.9	5.54	4.51	13,681				
TWA														
Jan-Mar 97	762	862	-99	-72	13,772.4	9,129.6	66.3	5.53	6.26	5,345	1,898.2	1,054.3	55.5	25,662
Apr-Jun 97	844	839	6	-14	14,705.8	10,273.7	69.9	5.74	5.71	5,958	2,051.9	1,169.5	57.0	23,490
Jul-Sep 97	908	845	64	6	15,922.4	11,447.0	71.9	5.70	5.31	6,324	2,209.2	1,284.2	58.1	22,539
Oct-Dec 97	813	812	1	-31	14,348.8	9,570.2	66.7	5.67	5.66	5,743	1,966.4	1,098.0	55.8	22,322
Jan-Mar 98	765	834	-69	-56	13,626.4	9,276.3	68.1	5.61	6.12	5,629	1,879.7	1,046.5	55.7	22,198
Apr-Jun 98	884	838	46	19	14,142.2	10,787.3	76.3	6.25	5.93					22,700
Jul-Sep 98	863	839	24	-5	14,293.8	10,531.3	73.7	6.04	5.87					
United														
Jan-Mar 97	4,121	3,927	194	105	64,832.6	45,296.6	69.9	6.36	6.06	19,683	9,386.1	5,530.0	58.9	86,443
Apr-Jun 97	4,382	3,970	412	242	67,458.0	48,894.2	72.5	6.50	5.89	21,271	9,917.6	6,032.1	60.8	88,939
Jul-Sep 97	4,640	4,077	563	579	71,375.4	53,721.0	75.3	6.50	5.71	22,641	10,566.8	6,561.1	62.1	90,324
Oct-Dec 97	4,235	4,144	91	23	68,364.7	47,419.6	69.4	6.19	6.06	20,608	10,269.1	6,023.6	58.7	91,721
Jan-Mar 98	4,055	3,932	123	61	66,393.3	44,613.0	67.2	6.11	5.92	19,136	9,987.5	5,589.7	56.0	92,581
Apr-Jun 98	4,442	3,972	470	282	69,101.7	50,152.2	72.6	6.43	5.75					94,100
Jul-Sep 98	4,783	4,088	695	425	73,913.5	56,283.7	76.1	6.47	5.53					
US Airways														
Jan-Mar 97	2,101	1,925	176	153	23,397.6	16,009.3	68.4	8.98	8.23	13,773	3,141.2	1,734.3	55.2	42,225
Apr-Jun 97	2,213	1,957	256	206	24,014.0	17,707.1	73.7	9.22	8.15	15,533	3,234.0	1,911.0	59.1	42,320
Jul-Sep 97	2,115	2,032	83	187	24,070.3	17,668.5	73.4	8.19	7.83	15,080	3,245.5	1,918.0	59.1	42,159
Oct-Dec 97	2,085	2,015	70	479	22,662.2	15,800.1	69.7	9.20	8.89	14,178	3,066.2	1,733.2	56.5	40,865
Jan-Mar 98	2,063	1,871	192	98	22,102.1	15,257.8	69.0	9.33	8.47	13,308	2,993.8	1,669.2	55.8	40,974
Apr-Jun 98	2,297	1,923	374	194	22,818.3	17,567.1	77.0	10.07	8.43					40,250
Jul-Sep 98	2,208	1,938	270	142	23,267.3	17,639.5	75.8	9.49	8.33					
ANA														
Jan-Mar 97	3,090	3,160	-69	-40	41,442.7	26,945.8	65.0	7.46	7.62	24,721				15,996
Apr-Jun 97	SIX MONTH FIGURES													
Jul-Sep 97	3,928	3,829	99	50	39,702.7	25,742.0	64.8	9.89	9.65	20,730				
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	3,459	3,545	-86	-68	40,446.9	26,187.7	64.7	8.55	8.76	20,102				
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	3,399	3,355	44	73	42,415.9	27,404.4	64.6	8.01	7.91	21,449				
Cathay Pacific														
Jan-Mar 97	SIX MONTH FIGURES													
Apr-Jun 97	2,037	1,858	179	138	28,172.0	20,044.0	71.2	7.23	6.60	5,208	5,074.0	3,613.0	71.2	
Jul-Sep 97	SIX MONTH FIGURES													
Oct-Dec 97	1,921	1,784	137	117	28,932.0	18,917.0	64.4	6.64	6.17	4,810	5,325.0	3,718.0	69.8	
Jan-Mar 98	SIX MONTH FIGURES													
Apr-Jun 98	1,677	1,682	-5	-20	28,928.0	19,237.0	66.5	5.80	5.81		5,208.0	3,481.0	66.8	
Jul-Sep 98														
JAL														
Jan-Mar 97	4,797	4,882	-86	-138	61,639.1	43,455.6	70.5	7.78	7.92	18,890	8,868.0	6,225.0	70.2	19,046
Apr-Jun 97	SIX MONTH FIGURES													
Jul-Sep 97	5,325	5,016	309	169	56,060.9	39,748.3	70.9	9.50	8.95	16,020	8,556.0	5,705.0	66.7	
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	4,279	4,344	-65	-911	56,514.7	39,012.2	69.0	7.57	7.69	15,344	8,570.8	5,628.5	65.7	
Apr-Jun 98														
Jul-Sep 98														

Note: Figures may not add up due to rounding. 1 ASM = 1.6093 ASK. *Airline group only.

	Group revenue	Group costs	Group operating profit	Group net profit	Total ASK	Total RPK	Load factor	Group rev. per total ASK	Group costs per total ASK	Total pax.	Total ATK	Total RTK	Load factor	Group employees
	US$m	US$m	US$m	US$m	m	m	%	Cents	Cents	000s	m	m	%	
Korean Air														
Jan-Mar 97														
Apr-Jun 97														
Jul-Sep 97	TWELVE MONTH FIGURES													
Oct-Dec 97	3,029	2,774	255	-234	58,246.9	40,190.3	69.0	5.20	4.76	25,580		9,737.7		17,139
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98														
Malaysian														
Jan-Mar 97	2,581	2,459	122	132	40,096.9	27,903.7	69.6	6.44	6.13	15,371	6,149.2	3,706.8	60.3	22,546
Apr-Jun 97														
Jul-Sep 97														
Oct-Dec 97	TWELVE MONTH FIGURES													
Jan-Mar 98	2,208	2,289	-81	-81	42,294.0	28,698.0	67.9	5.22	5.41	15,117	6,411.0			
Apr-Jun 98														
Jul-Sep 98														
Singapore														
Jan-Mar 97	2,492	2,205	288	316	37,354.4	27,490.1	73.6	6.67	5.90	6,092	6,901.3	4,879.1	70.7	27,223
Apr-Jun 97	SIX MONTH FIGURES													
Jul-Sep 97	2,549	2,171	379	402	38,125.4	28,216.7	74.0	6.69	5.69	6,135	7,231.9	5,091.5	70.4	27,777
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	2,336	2,080	256	258	39,093.6	26,224.3	67.1	5.98	5.32	5,822	7,303.0	4,951.5	67.8	
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	2,232	2,013	219	278	41,466.2	29,456.2	71.0	5.38	4.86	6,240	7,693.4	5,225.2	67.9	
Thai Airways														
Jan-Mar 97	824	777	47	25	11,369.0	8,128.0	71.5	7.25	6.83	4,000	1,621.0			
Apr-Jun 97	773	775	-2	11	11,352.0	7,583.0	66.8	6.81	6.83	3,700	1,620.0			
Jul-Sep 97	697	672	25	-1,050	11,462.0	7,668.0	66.9	6.08	5.86	3,500	1,639.0			
Oct-Dec 97	656	649	7	-661	12,144.0	7,715.0	63.5	5.40	5.34	3,800	1,712.0			
Jan-Mar 98	631	558	73	610	12,211.0	8,522.0	69.8	5.17	4.57	4,000	1,715.0			
Apr-Jun 98	586	583	3	-179	12,084.0	7,963.0	65.9	4.84	4.82		1,700.0			
Jul-Sep 98														
Air France														
Jan-Mar 97	8,780	8,563	217	75	77,333.0	58,586.0	75.8	11.35	11.07	16,733		5,036.0		36,173
Apr-Jun 97	SIX MONTH FIGURES													
Jul-Sep 97	5,224	4,850	374	297			76.1							
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	5,126	5,079	47	18										
Apr-Jun 98	2,303				23,051.0	17,247.0	74.8							
Jul-Sep 98														
Alitalia														
Jan-Mar 97														
Apr-Jun 97														
Jul-Sep 97	TWELVE MONTH FIGURES													
Oct-Dec 97	5,083	4,878	205	161	50,171.4	35,992.3	71.7	10.13	9.72	24,552				18,676
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98														
BA														
Jan-Mar 97	3,179	3,130	49	113	36,211.0	25,416.0	70.2	8.78	8.64	9,070	5,057.0	3,456.0	68.3	60,188
Apr-Jun 97	3,624	3,395	229	260	39,697.0	28,756.0	72.4	9.13	8.55	10,613	5,589.0	3,875.0	69.3	60,083
Jul-Sep 97	3,646	3,319	327	244	40,909.0	30,884.0	75.5	8.91	8.11	11,194	5,711.0	4,098.0	71.8	61,321
Oct-Dec 97	3,580	3,436	144	110	40,059.0	26,929.0	67.2	8.94	8.58	9,837	5,618.0	3,791.0	67.5	61,144
Jan-Mar 98	3,335	3,210	125	119	39,256.0	26,476.0	67.4	8.50	8.18	9,311	5,485.0	3,642.0	66.4	60,770
Apr-Jun 98	3,783	3,497	286	217	44,030.0	31,135.0	70.7	8.59	7.94	11,409	6,174.0	4,157.0	67.3	62,938
Jul-Sep 98	4,034	3,601	433	357	46,792.0	35,543.0	76.0	8.62	7.70	12,608	6,533.0	4,630.0	70.9	64,106
Iberia														
Jan-Mar 97														
Apr-Jun 97														
Jul-Sep 97	TWELVE MONTH FIGURES													
Oct-Dec 97	4,168	3,900	268	126*	37,797.6	27,679.2	73.2	11.03	10.32	15,432				
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98														
KLM														
Jan-Mar 97	1,361	1,444	-83	-153	16,279.0	12,455.0	76.5	8.36	8.87		2,838.0	2,090.0	73.6	31,912
Apr-Jun 97	1,692	1,566	126	99	17,310.0	13,640.0	78.8	9.77	9.05		2,996.0	2,335.0	77.9	34,804
Jul-Sep 97	1,842	1,592	250	438	18,798.0	15,736.0	83.7	9.80	8.47		3,231.0	2,587.0	80.1	34,928
Oct-Dec 97	1,630	1,570	60	23	18,096.0	13,555.0	74.9	9.01	8.68		3,098.0	2,404.0	77.6	35,092
Jan-Mar 98	1,538	1,568	-30	528	17,598.0	13,240.0	75.2	8.74	8.91		2,981.0	2,250.0	75.5	34,953
Apr-Jun 98	1,702	1,572	130	105	18,600.0	14,290.0	76.8	9.15	8.45		3,177.0	2,365.0	74.4	35,666
Jul-Sep 98	1,865	1,675	190	121	19,363.0	15,984.0	82.6	9.63	8.65		3,359.0	2,583.0	76.9	33,586
Lufthansa* **														
Jan-Mar 97	3,198	3,198	-1	12*	28,099.0	19,726.0	70.2	11.38	11.38	9,186	4,985.0	3,477.0	69.7	57,291
Apr-Jun 97	3,654	3,463	192	220*	32,109.0	23,465.0	73.1	11.38	10.79	11,618	5,505.0	3,893.0	70.7	57,901
Jul-Sep 97	3,721	3,418	303	321*	33,739.0	26,410.0	78.3	11.03	10.13	12,807	5,787.0	4,298.0	74.3	58,178
Oct-Dec 97	3,989	3,566	423	384*	30,209.0	21,691.0	71.8	13.20	11.80	10,839	5,457.0	3,919.0	71.8	59,630
Jan-Mar 98	2,902	2,860	42	223	23,763.0	16,239.0	68.3	12.21	12.04	8,808	4,621.0	3,171.0	68.6	54,849
Apr-Jun 98	3,507	3,081	426	289	26,132.0	19,489.0	74.6	13.42	11.79	10,631	5,078.0	3,575.0	70.4	54,556
Jul-Sep 98	3,528	3,167	361	198	26,929.0	20,681.0	76.8	13.10	11.76	11,198	5,231.0	3,748.0	71.6	54,695
SAS														
Jan-Mar 97	1,133	1,108	24	-36*	7,443.0	4,335.0	58.2	15.22	14.89	4,515				23,440
Apr-Jun 97	1,379	1,151	228	178*	7,962.0	5,392.0	67.7	17.31	14.46	5,617				23,904
Jul-Sep 97	1,244	1,093	151	83*	8,084.0	5,598.0	69.2	15.39	13.52	5,325				24,168
Oct-Dec 97	1,334	1,204	130	63*	7,771.0	4,939.0	63.6	17.17	15.49	5,212				28,716
Jan-Mar 98	1,184	1,077	106	76*	7,761.0	4,628.0	59.6	15.25	13.88	4,863				24,722
Apr-Jun 98	1,323	1,149	174	107*	7,546.0	5,260.0	69.7	17.53	15.23	5,449				25,174
Jul-Sep 98	1,283	1,152	131	127*	8,283.0	5,843.0	70.5	15.49	13.91	5,714				26,553
Swissair**														
Jan-Mar 97	SIX MONTH FIGURES													
Apr-Jun 97	1,787	1,724	63	76	17,464.4	11,880.7	68.0	10.23	9.87	7,643	3,340.6	2,291.9	68.6	10,163
Jul-Sep 97	SIX MONTH FIGURES													
Oct-Dec 97	2,084	1,946	138	147	18,934.8	13,770.8	72.7	11.01	10.28	6,352	3,536.4	2,538.1	71.8	10,132
Jan-Mar 98	SIX MONTH FIGURES													
Apr-Jun 98	1,907	1,780	127	86	18,983.8	13,138.7	70.5	10.05	9.38					9,756
Jul-Sep 98														

Note: Figures may not add up due to rounding. 1 ASM = 1.6093 ASK. *Pre-tax. **SAirLines' figures apart from net profit, which is SAirGroup. ***Excludes Condor from 1998 onwards.

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