A VERY HAPPY NEW MILLENNIUM TO ALL OUR READERS

Aviation Strategy

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A fly on the wall

Oh to be a fly on the wall at global alliance quarterly meetings when airline chief executives discuss and debate the state of the industry. For example, at the latest oneworld meeting the American Airlines team no doubt were called upon to update their alliance partners on their unilateral deal with Swissair. BA in particular would have been listening closely, having just lost out to Swissair in their bid to purchase 20% of LOT.

Now the focus of attention for any fly interested in the aviation industry must turn to the next meeting of the chief executives of the Star Alliance, where Cheong Choong Kong, the deputy chairman and chief executive of Singapore Airlines, will explain the thinking behind his airline's decision to buy 49% of Virgin Atlantic.

SIA has been a somewhat reluctant member of the global alliance fraternity, a sentiment shared perhaps by its great regional rival, Cathay Pacific. Both airlines entered into the alliance game relatively late, when their structure had already been set by the major US and European carriers. They also committed themselves at a time of relative weakness following the (temporary) collapse of the Asian economies.

Rather than join a strategic alliance, SIA for some time has pursued a policy, in some respects similar to that of the SAir Group, of expansion through acquisition. Like SAir, SIA has a strong balance sheet; unlike SAir, SIA had, until the Virgin acquisition, failed to get into the ownership game. It tried to buy into Qantas, Ansett, Thai, China Airlines and an Indian start-up all without success.

SIA's entry into Star fooled some into perhaps believing that SIA was now fully embracing the global alliance concept. The fact is that it is pursuing a clever dual track approach. Referring to the Virgin purchase, SIA states: "this big investment ... will move it nearer to its goal of being a major global group of airlines and airline-related companies". It should be noted that the acquisition of a stake in Virgin Atlantic completes SIA's round the world network, and Branson has stated that his airline will remain outside Star.

So at the next Star meeting, the SIA CEO may be met with some stony faces. As the only Star partner with access to the transatlantic market from Heathrow, United will be keen to hear how SIA code-sharing agreements with Virgin Atlantic will impact its services. Similarly, a financially strengthened Virgin will pose a serious threat to the transatlantic ambitions of Lufthansa/SAS-backed-British Midland.

There are also repercussions in the southern hemisphere. Virgin Australia (outside the SIA deal, but nonetheless backed by a richer Branson thanks to SIA) is set to become a low cost rival to Star partner Ansett. Further, Virgin Atlantic currently serves the Australian market through a codeshare with Ansett. It will be interesting to see whether the Ansett codeshare survives or whether Virgin links up exclusively with SIA's wide-ranging network to Australia.

Still, Virgin Atlantic could be integrated into the Star Alliance at some point in the future when a UK-US open skies is signed and BA/AA antitrust immunity is finally agreed. Then Virgin, armed with more Heathrow slots, would be even more effective competitor against oneworld. And then Virgin Australia could become the low cost arm of Ansett, which would target oneworld rival Qantas.

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Branson: the wizard of Oz?

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Richard Branson, owner of Virgin Atlantic and part owner of the floated Virgin Express, has announced his intentions to start up a low cost airline in the Australian domestic market. What lessons can be learnt from the none-too-successful Virgin Express operation? Can Virgin Australia succeed where the previous generation of low cost carriers - Compass Airline and Southern Cross - failed?

Lessons of Virgin Express

Brussels-based Virgin Express is many observers' favourite to be the next European airline failure, following the demise in 1999 of carriers such as AB Airlines, Color Air, and Debonair. Virgin Express has been a very poor stock market performer: it is currently rated 64% below its 1997 flotation price. Some of Virgin Express's problems are outside its control but most could have been foreseen.

• Conflict with the Belgian authorities

It is not easy to run an airline (nor any company) out of Belgium. Labour costs are inflated by government social charges which add about 37% to the basic salary compared to around 10% in the UK and other countries. Faced with what is regarded as unreasonably high pilot costs and inflexible work rules, Virgin Express's management made last year (1999) a decision to concentrate future growth in Shannon, Ireland where they already had five 737s based.

This provoked a review of the carrier's AOC by the Belgian Civil Aviation Administration (BCAA). The BCAA was specifically concerned that the airline's AOC covered only Belgian-registered aircraft and that plans to shift the main operation to Ireland was a flag-of-convenience tactic.

Virgin Express has responded by arguing that it is not labour costs that are driving it to Ireland, but an inability to hire Belgian pilots. The airline claims that it has only enough Belgian crews to man nine of its total of 16 Belgian-registered aircraft.

• Cultural problems

The airline has also admitted to cultural differences between the former US senior management team under Jonathon Ornstein, imported from Mesa Airlines in New Mexico whence they have returned, and the European workforce. It wasn't just the brasher American style, it was the fact that they imported a US product but didn't seem to understand that it had to be adapted to a new environment. By contrast, Ryanair and easyJet have borrowed all the key low-cost strategies from the US, but have given them a uniquely European feel.

The recent appointment of John Osborne (formerly GB Airways) as CEO may be significant; certainly he is more likely to appease the Belgian authorities who have now granted a four-month extension to the airline's AOC.

• The relationship with Sabena

Virgin Express more or less had to forge a codeshare/blockseat agreement with Sabena in order to gain access to Sabena's slots at Heathrow. However, the agreement meant that Sabena sold the business cabin, leaving Virgin Express just with Economy and hence unable to replicate its very successful Virgin Atlantic product within Europe.

Cooperation between the two airlines has always been strained, and the relationship is inevitably coming under stress as competition between the two carriers grows - for example, Virgin Express competes with its own service from Brussels to London Stansted. The arrival of Sabena's new A319s in 2000 may terminate the agreement.

• The route network

The network has little in the way of coherence. Apart from London Stansted and possibly Shannon, Virgin Express flies to some of the highest cost airports in Europe. This is anathema to Europe's leading low cost carrier, Ryanair.

From its primary hub at Brussels National, only three destinations have a daily frequency in excess of four flights - London (split between ser-

vices to Stansted, Heathrow and Gatwick), Barcelona and Rome. Six other European cities are served from Brussels but for the most part only have one daily departure.

Virgin Express's timetable shows many connecting opportunities over Brussels but the only points linked with more than three daily frequencies are all from London - to Barcelona, Copenhagen, Madrid, Milan, Rotterdam and Rome. All these have very attractive direct services offered either by flag-carriers or by other low cost airlines. Virgin Express must have to operate at the most price-sensitive and therefore lowest-yielding end of the market

So the Virgin Express formula is unlikely to be replicated in Australia, and Richard Branson will presumably have learnt the lessons of Virgin Express in his new venture Virgin Australia. There are similar traps to fall into in the Australian market with its history of heavy unionisation and bureaucracy.

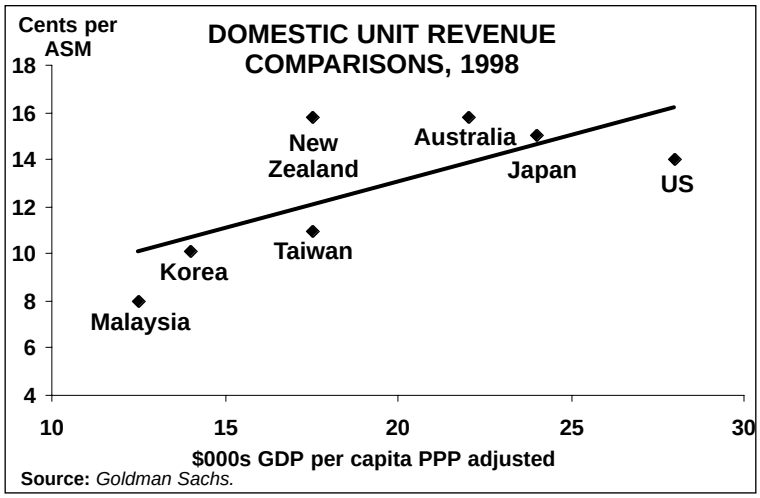
Prospects for Virgin Australia

Virgin Australia is slated to begin operations in July 2000, well before the Sydney Olympics in September 2000. The low cost airline will be aimed primarily at Australia's trunk routes and plans to offer at least 50% of its available capacity at fares that are half the level of today's discounted ticket prices, for example, A$100 (US$63) for a single fare on Sydney-Melbourne, a distance of some 750km.

Although Branson has indicated that he expects his airline to mostly stimulate its own demand and so not significantly impact the incumbents, this was not a view shared on the Australian stock market. On the day of the announcement, A$780m (US$490m) was wiped off the value of Qantas shares.

Branson appears to have played an astute political game. The Australian Foreign Investment Review Board has given the airline the go-ahead, a major hurdle in that it is one of the few and perhaps only example of a country granting a non-resident domestic cabotage rights. The argument that the incumbents have failed to compete effectively and that the travelling public has lost out badly is a powerful one.

He has also held meetings with Australian Prime Minister John Howard who apparently has given Branson assurances that the Government

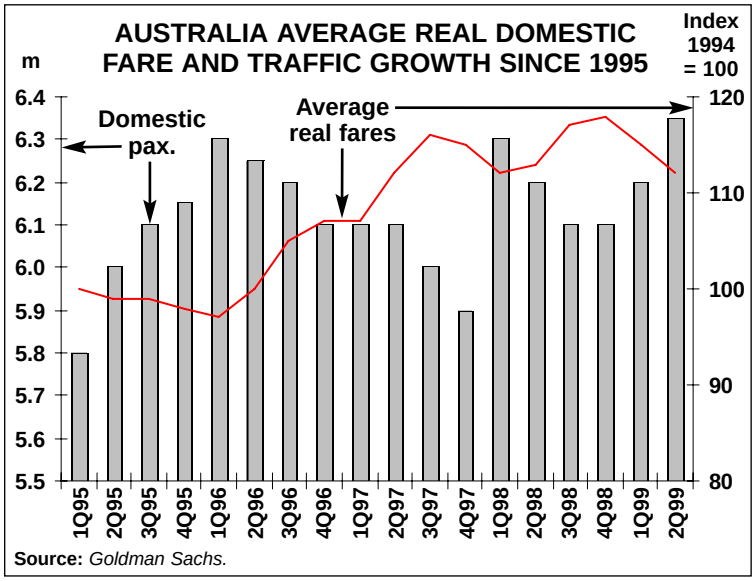


Source: *Goldman Sachs.*

would invoke anti-competitive legislation to ensure that there is fair competition.

These reassurances are significant. Ansett and Qantas have been able to keep a duopoly grip on the vast majority of major domestic routes and have in the past seen off new entrants. In the case of Compass, the original airline using A300s failed in 1991, and after restructuring as an MD-80 operator, failed again in 1993.

The Virgin name is known in Australia through the various Virgin brands, though on nothing like the British scale. Lucky Australians can look forward to seeing a lot more of Branson. The Virgin Holidays company will also no doubt have a part to play in the success or otherwise of the new venture. Australia is becoming a very popular tourist as well as VFR destination, and as part of an extended stay in the country, domestic air travel is a prerequisite.



Source: *Goldman Sachs.*

Virgin Australia is expected to start operations with five 737-300s, and eventually serve most of the country's major population centres. The airline will be launched with an initial start-up capitalisation of US$30m (no problems after the SIA sale) and with a target of carrying 3m passengers a year (about 15% of the current market).

Australia is a classic example of a country where a low cost operation should be successful. Rail and road travel is generally not a good substitute for air travel, and distances between major towns and cities are large. Air transport remains relatively high yield-low volume, as opposed to the US market, which is high volume-low yield. Yet the Australian market is highly price-elastic: during Compass's foray into the market, between 1990 and 1992 fares fell by 30% on average which stimulated a 60% increase in passenger volumes at a time when the economy was in recession.

Impact on Ansett and Qantas

Branson's assertion that Virgin Australia will have little impact on the incumbents is clearly wrong judging by their reactions - stalling tactics, threats to match any fares offered, denying access to airline owned terminals because of lack of space, planning to start up their own low cost subsidiaries etc. Virgin Australia will inevitably have a significant cost advantage over Ansett and Qantas. The incumbents enjoy a well-established duopoly, and only minor fluctuations in market shares have been the norm. Both airlines carry significant overheads and the heavily unionised workforces have established working practices and pay scales to match.

However, the reaction of the stock market is equally over the top. The European experience is that new entrants do stimulate markets and precipitate necessary costs cutting and efficiency improvement strategies in the incumbent carriers. Aer Lingus is a European example of a full service carrier that learnt to co-exist and compete successfully with a low cost airline, Ryanair (see *Briefing,* November 1999).

The weapons in the armoury of the incumbents are branding, Australian loyalty, and capacity. Both carriers are leading members of global alliances, Qantas with oneworld, Ansett with Star, and are members of global frequent flier programmes. The loyalty programmes will presumably be used aggressively to retain premium passengers.

Both Qantas and Ansett will need to adopt carefully thought-out yield and capacity management strategies if they are not to lose unacceptable market shares. More aggressive pricing of unused off-peak capacity is just one weapon that will be used to compete. But such pricing policies may come under scrutiny from the regulatory authorities, which have already been alerted by Branson.

Airport strategy

Apart from Sydney, all of Australia's airports have been privatised, and will presumably be prepared to offer some sweetheart deals to Virgin Australia. But the new airline faces two problems.

First, there are few secondary airports in Australia. A possible exception is at Melbourne where Avalon Airport represents a possible alternative to the main BAA-managed facility.

Second, although slot availability is not generally an issue in Australia, there is a severe slot shortage at Sydney. Virgin Australia has been provisionally awarded 26 slots at Sydney but very few of these are likely to be at peak times.

A further problem at Sydney is a lack of terminal space. Apart from the common user terminal at Sydney, which is used for international flights, the only other two terminals are owned by Qantas and Ansett and are virtually running at maximum capacity.

In the short-term, the Australian Government will insist that gate facilities are made available by one of the incumbents. In the medium term there is the prospect that a new domestic passenger terminal may be built to house both Virgin and other domestic start-ups. According to the airport itself, this could be up and running within six months of being given the go-ahead.

Branson should be able to produce an airline with a significant cost advantage, one that must mirror the Southwest/Ryanair model rather than the Virgin Express model (i.e. truly low cost and focussed on point-to-point traffic offering high frequencies). But even before Virgin Australia is launched it has bred imitators - Spirit Airlines has announced a start-up of operations in June 2000, initially with two 737-400s on Melbourne-Sydney and Melbourne-Brisbane at fare levels that would undercut Virgin's.

Are airlines acting rationally?

The tentative answer is “probably yes”, according to an analysis of 2000 capacity plans on long haul routes carried out by Credit Agricole Indosuez Cheuvreux*.

For the first time there is evidence that the industry is putting in place a very significantly reduced level of capacity growth for the summer of 2000 compared with 1999. In the short term, the winter season 1999/2000 is likely to remain difficult, with increases of capacity on the Atlantic of 10%. For the summer season 2000 however, it appears that capacity on the North Atlantic will increase by only 6.2% in Q2 and by only 0.4% in Q3.

South Atlantic capacity plans show marked reductions of 2.9% and 6.3% in the same periods.

At the same time there appears to be only cautious increases of capacity onto the Pacific, where capacity appears to be growing by 4.2% in the Q2 and 1.0% in the Q3, after only modest increases in 1999.

On Europe-Asia, capacity growth plans are showing reasonable optimism with 5.1% and 4.3% increases in capacity in the second and third quarters, as the region's recovery manifests itself.

As always, some important caveats have to be added. The analysis is based on OAG data on non-stop flights (excluding code-share duplication). The airlines, of course, are not committed to the schedules they have filed with the OAG, and the second and third quarters of 2000 could well be modified. But, at present, these capacity numbers show what the airlines expect to operate.

The North Atlantic

The North Atlantic was the area of greatest concern in 1999. There have been two main factors - a switch of capacity from Asian and Pacific routes that had suffered in the previous year, and an element of "catch-up" by the market trailers.

Specifically, Lufthansa (sticking to its five-year plan) took delivery of long haul aircraft, increased transatlantic frequencies and opened new destinations in the US, thereby increasing capacity by 16.2% in 1999. Air France took advantage of the opening of the third runway at CDG and the opportunities provided by the signing of the new Franco-American bilateral in 1998 after seven years of operating capacity-constrained without an underlying bilateral air service agreement. This resulted in a 17.0% increase in their transatlantic capacity.

Alitalia's capacity jumped 35.9% when it took advantage of the opening and build-up of the new hub at Malpensa and the release from EC shackles.

BA had increased capacity strongly in 1998 by 14%, in part a defensive move in anticipation of the EC requiring it to give up slots at Heathrow in exchange for the approval of its alliance with American, and as an offensive move against the possibility

* *Capacity Plans 2000* by James Halstead and Kimberly Stewart of Credit Agricole Indosuez Cheuvreux, Dec 99

NORTH ATLANTIC CAPACITY GROWTH PLANS

	1999 market share	1999 change on 1998	1Q 2000 change on 1Q 1999	2Q 2000 change on 2Q 1999	3Q 2000 change on 3Q 1999
British Airways	14%	4.0%	0.2%	-0.9%	-1.6%
Lufthansa	8%	16.2%	14.1%	7.6%	5.5%
Delta	8%	3.0%	12.5%	14.5%	-0.3%
United	8%	18.6%	5.9%	-4.7%	-6.8%
American	8%	9.8%	10.3%	4.4%	-3.0%
Continental	5%	16.5%	18.4%	12.0%	-2.4%
Virgin Atlantic	5%	11.5%	18.6%	18.5%	15.2%
Air France	5%	17.0%	15.1%	14.9%	11.6%
KLM	5%	-0.3%	3.3%	2.9%	1.8%
Northwest	4%	10.4%	1.6%	-7.5%	-6.8%
Air Canada	4%	-1.7%	6.2%	1.9%	-0.1%
Alitalia	3%	35.9%	24.8%	41.8%	10.7%
Swissair	3%	9.9%	9.5%	7.7%	12.6%
US Airways	2%	18.3%	3.1%	22.0%	33.3%
Iberia	2%	49.1%	50.5%	17.5%	4.5%
Sabena	2%	32.8%	17.8%	0.0%	0.1%
Aer Lingus	2%	23.0%	45.0%	30.7%	20.1%
SAS	1%	16.0%	23.1%	21.3%	21.1%
TWA	1%	-10.1%	4.9%	-0.8%	-7.6%
Canadian	1%	6.1%	-4.2%	6.6%	-7.4%
TOTAL	**100%**	**10.2%**	**9.7%**	**6.2%**	**0.4%**

Source: *OAG, BACK Associates.*

SOUTH & MID-ATLANTIC CAPACITY GROWTH PLANS

	1999 market share	1999 change on 1998	1Q 2000 change on 1Q 1999	2Q 2000 change on 2Q 1999	3Q 2000 change on 3Q 1999
Air France	14%	13.9%	10.0%	10.2%	5.0%
Iberia	12%	22.2%	-1.0%	-17.7%	-17.4%
British Airways	9%	15.4%	-3.8%	-9.3%	-9.4%
Lufthansa	7%	25.7%	19.0%	5.2%	5.6%
Varig	8%	2.0%	-13.6%	-20.4%	-2.6%
Aerolineas Argentinas	4%	14.9%	30.1%	47.9%	8.4%
AOM	4%	13.0%	16.2%	-7.7%	-16.9%
Alitalia	4%	-4.7%	-17.2%	-1.4%	-1.1%
KLM	4%	9.5%	-4.4%	22.9%	-8.2%
Condor	4%	11.9%	-10.4%	11.5%	26.8%
TAP Air Portugal	3%	30.2%	22.4%	-4.6%	-14.2%
VASP	2%	-5.5%	6.1%	7.7%	5.6%
Cubana	2%	3.7%	4.4%	-5.3%	-12.2%
Aeromexico	2%	14.4%	8.9%	48.0%	50.6%
Air Aruba	2%	-1.6%	8.8%	-3.5%	-3.0%
Avianca	1%	21.2%	28.3%	15.3%	3.0%
LTU	3%	1.3%	3.6%	-19.3%	-37.1%
TOTAL	**100%**	**16.1%**	**4.9%**	**-2.9%**	**-6.3%**

Source: *OAG, BACK Associates.*

of a new open-skies agreement between the UK and the US.

With a commanding market share of 14% of the non-stop market on the North Atlantic, BA experienced the greatest bottom-line impact of the global shift in capacity in 1999. Its response was its downsizing /higher yield strategy (*Briefing*, September 1999), which started to take effect from the third quarter of 1999 and will really show up in 2000. Planned North Atlantic capacity increases only 0.2% in the first quarter and declines 0.9% and 1.6% in the second and third quarter, respectively.

KLM was also badly hit by the increases in competition, but the effects are distorted by comparisons with the period in 1998 that included the impact of the strike at partner Northwest. KLM/Northwest were busy readjusting the joint venture capacity in the first half of 1999, but now approaching equilibrium, have cut back growth plans for next year. This is offset to some extent by a strong increase in capacity planned by fellow alliance partner Alitalia.

According to the schedules, Swissair will still be looking for a 10% growth in capacity through next summer (albeit mitigated by flat capacity from JV partner Sabena), presumably trying to recover from the dissolution of the Atlantic Excellence Alliance.

All the US Majors expanded capacity markedly in 1999. But 2000 will be characterised by consolidation with very modest growth rates, according to the planned schedules. US Airways, developing from a small base, is the exception.

Oneworld and Star remain neck and neck with 25% and 23% share of capacity respectively. However, while BA and American are forbidden from co-ordinating on the Atlantic, oneworld is at a disadvantage. Canadian's 1% share of the North Atlantic will remain oneworld capacity pending the eventual integration of Canadian into Air Canada. With British Midland also in Star Alliance, Star will be in a similar position at Heathrow as that enjoyed by United and American at Chicago. This underlines the ridiculousness of the regulators' focus on the local competitive impact of the proposed BA/AA alliance. In the end it may allow the regulators to soften their approach.

Overall, it looks like 4% growth in capacity on the North Atlantic in 2000.

The South and Mid-Atlantic

The South and Mid-Atlantic markets have had a very high rate of capacity growth, 16.1%, in 1999 mostly due to the market leaders Air France and Iberia switching multi-stop flights to direct flights. In the second quarter of 2000 most European carriers will be cutting back severely in response to overcapacity.

The main exceptions are the new alliance members Air France and Aeromexico who are aggressively increasing capacity to further develop their non-stop product. Together with Delta they increased capacity by 14.0% in 1999 and are scheduled for double digit growth in 2000.

BA pumped capacity into this market in 1999 but looks as if it will be taking much of that increase out in 2000.

There is a marked contrast in the plans of the two main Latin American carriers. Aerolineas is going for very rapid growth while financially-troubled Varig is retrenching.

Overall there should be little change in capacity between 1999 and 2000.

EUROPE-ASIA/OCEANIA LONG-HAUL CAPACITY GROWTH PLANS

	1999 market share	1999 change on 1998	Q1 2000 change on 1Q 1999	Q2 2000 change on 2Q 1999	Q3 2000 change on 3Q 1999
Singapore	10%	11.0%	13.3%	15.3%	16.3%
Lufthansa	9%	13.4%	11.0%	5.0%	5.0%
JAL	10%	3.1%	0.4%	0.1%	-0.2%
British Airways	10%	-9.2%	-4.5%	-5.6%	-4.6%
Thai Airways Int.	7%	16.2%	8.6%	4.5%	-0.6%
Air France	7%	1.2%	-3.0%	0.1%	2.5%
Malaysian	6%	21.6%	8.5%	10.9%	2.0%
KLM	6%	2.9%	6.2%	2.2%	4.6%
Cathay Pacific	6%	1.1%	-3.3%	4.3%	3.8%
Qantas	5%	13.4%	12.0%	11.9%	12.0%
All Nippon	4%	-6.2%	0.7%	16.3%	15.3%
Swissair	3%	7.3%	8.7%	0.6%	3.7%
Alitalia	3%	3.8%	0.4%	1.5%	-1.4%
Korean Air	2%	2.4%	-6.9%	-11.7%	-11.9%
Air China	2%	4.7%	2.2%	4.4%	6.6%
Virgin Atlantic	2%	-4.9%	14.4%	6.9%	0.5%
Garuda	1%	-13.3%	12.0%	11.8%	37.3%
SAS	1%	-21.2%	12.0%	26.8%	27.2%
Austrian	1%	16.5%	25.3%	46.8%	45.8%
Finnair	1%	1.1%	11.2%	-20.7%	-10.0%
TOTAL	**100%**	**3.6%**	**6.3%**	**5.1%**	**4.3%**

Source: *OAG, BACK Associates.*

Europe-Asia/Oceania

On the direct routes from Europe to Asia, there has this year been a noticeable shift in power. European carriers as a whole have cut capacity while the Asian carriers have expanded.

It looks as if BA has lost its market leader position which it had in 1998 to SIA which in 2000 will have about 11% of the capacity (Virgin Atlantic's share is around 2%).

Again Lufthansa has maintained operations where others cut, and is currently reaping the benefits of the faster than anticipated recovery in the region. Cargo is producing very positive numbers that should assist in improving weak overall yields.

Overall non-stop capacity on offer has grown by only about 3.6% in 1999. In 2000 4-5% growth in capacity is expected, again pretty modest but the highest rate of the four main long haul sectors.

The Pacific

Although capacity was shifted away from the Pacific to the Atlantic in 1999, the market still increased by 3.0%. This was due primarily to the new bilateral treaty between the US and Japan whereby the carriers had to "use or lose" the newly allocated slots.

The market leaders - United, JAL and Northwest - controlled 44% of capacity in 1998 but as the new entrants, most visibly American, have expanded rapidly they have been forced to concede market share.

American looks as if it will be consolidating in 2000 while the growth rates of the other Majors will be modest or non-existent. Delta's decline reflects its withdrawal from some markets.

Korean and Asiana are showing a remarkable recovery from their deep crises. Qantas, in readiness for the Olympics, will be boosting capacity in 2000.

Overall though Pacific market capacity may only grow by 3-4% in 2000.

PACIFIC CAPACITY GROWTH PLANS

	1999 market share	1999 change on 1998	1Q 2000 change on 1Q 1999	2Q 2000 change on 2Q 1999	3Q 2000 change on 3Q 1999
United	15%	-8.5%	1.8%	0.7%	6.6%
JAL	14%	8.5%	15.6%	6.5%	-4.1%
Northwest	12%	-12.2%	2.2%	-0.6%	-5.1%
Korean Air	6%	18.2%	33.6%	3.9%	-2.4%
Qantas	4%	9.6%	12.2%	18.9%	18.4%
All Nippon	5%	18.3%	14.9%	1.0%	9.3%
EVA	4%	0.1%	12.7%	21.4%	15.1%
China Airlines	4%	5.3%	3.9%	4.1%	0.3%
Cathay Pacific	4%	12.1%	-6.2%	2.3%	-
Canadian	3%	-5.7%	-5.7%	-7.4%	-4.4%
Singapore	3%	-3.6%	5.7%	4.4%	3.0%
Air New Zealand	3%	7.7%	-6.5%	-7.6%	-5.9%
American	3%	41.2%	-6.0%	-3.5%	-1.4%
Asiana	2%	10.9%	39.1%	21.2%	12.6%
Continental	3%	19.8%	-1.5%	-2.6%	-2.2%
Japan Air Charter	2%	4.6%	-	-	-
Philippine Air Lines	2%	42.4%	73.1%	111.7%	-
Delta	3%	-6.2%	-51.3%	-21.2%	-19.4%
Air Canada	1%	-2.4%	48.9%	41.9%	11.5%
Malaysian	1%	10.2%	6.1%	-	-
TOTAL	**100%**	**3.0%**	**5.7%**	**4.2%**	**1.0%**

Source: *OAG, BACK Associates.*

The retirement factor

Whether or not airlines exercise restraint with their schedules, the supply and demand balance in the aircraft market looks increasingly precarious.

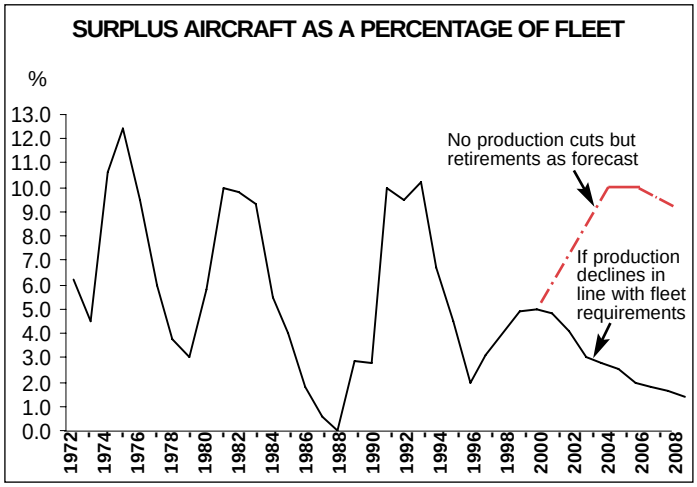
According to ACAS, there will be about 1,000 jet deliveries to North American, European and Asian airlines in 2000, representing over 9% of the end-1999 fleet (see table below). For narrowbodies the maximum theoretical fleet growth is over 10%, for widebodies 6.5%.

The imbalance can be resolved by: increasing schedules, which will certainly damage yields and load factor; parking aircraft, which is already happening and indicates that a correction in values and lease rates is close; or by increased scrapping and production cut-backs.

The good news is that retirements may actually increase as airlines strive to meet Stage 3/Chapter 3 noise rules and as large numbers of very old aircraft reach the end of their useful economic lives. According to ESG Aviation Services, some 2,940 aircraft in the world fleet at the end of 1998 were still non-Chapter 3 compliant, and of those 2,250 were at least 25 years old.

ESG forecasts an average of 319 retirements a year in 1999-2004, while Boeing's estimate is 267. These predictions compare with an annual average of 174 retirements over the past five years and a peak of 268 in 1998.

Just two problems here. First, many of those retirements may not materialise, as predicting them is notoriously difficult. All forecasters in the past have regularly overestimated the number of retirements, as operators like Northwest have profitably stretched the lives of older assets.



Second, even if all those aircraft are retired (say, if the price of fuel spikes up), that is not likely to be enough to avoid excess capacity.

This concern was expressed by ESG's Ed Greenslet at a December conference in New York. He estimated that 30% of future orders will be for replacement purposes (up from 20% in the past) and warned that "depending on retirements to maintain a comfortable supply/demand balance in aircraft capacity is a very risky proposition".

In the rosiest scenario, aircraft production would decline in line with fleet requirements, resulting in a reasonably balanced market with "less fearsome" surplus aircraft peaks than in the past three cycles.

If retirements take place as forecast and there are no production cuts, the peak would be at least as bad as those seen in the past. In the horror scenario, the combined effect of no production cuts and fewer retirements could mean extremely difficult conditions in the used aircraft market.

JET FLEETS end-99

	Narrowbodies			Widebodies			Total		
	Ch 2	Ch 3	Total	Ch 2	Ch 3	Total	Ch 2	Ch 3	Total
N America	717	3,612	4,329	65	807	872	782	4,419	**5,201**
Europe	237	2,314	2,551	35	768	803	272	3,082	**3,354**
Asia/Pacific	169	909	1,078	42	1,020	1,062	211	1,929	**2,140**
TOTAL	**1,123**	**6,835**	**7,958**	**12**	**2,595**	**2,737**	**1,265**	**9,430**	**10,694**
PLANNED DELIVERIES IN 2000									
N America			477			73			**550**
Europe			289			48			**337**
Asia/Pacific			56			56			**112**
TOTAL			822			177			**999**
DELIVERIES AS % OF FLEET									
N America			11.0%			8.4%			**10.6%**
Europe			11.3%			6.0%			**10.0%**
Asia/Pacific			5.2%			5.3%			**5.2%**
TOTAL			10.3%			6.5%			**9.3%**

Joys of the Internet

Just how important is the Internet to airlines? Very, according to ebullient columnist Holly Heggeman who covers the subject for TheStreet.com and Planebanter.com. In fact, she argues that Internet exposure (percentage of sales via the Internet) will become the fourth basic financial benchmark for stock analysts after yield, unit cost and load factor.

Internet distribution is undoubtedly the cheapest means of distribution available, which is why e-ticketing took off in the first place. But there is also some evidence the Internet may be effective in pushing up unit revenues.

There are two aspects to this. The first is well known: the Internet is used to sell off excess seats at bargain prices through companies like Priceline.com, seats which otherwise would have no revenue attached to them. Delta, for example, has confirmed that a measurable improvement in its RASM is due to participation in Priceline.com.

The second trend is only now emerging: in the US several airlines have revealed that the average price of tickets sold via their own websites is actually higher than that through traditional channels. The reason is increasing use of the Internet by business travellers who are getting used to buying business-class tickets on the web.

In short, usage of companies like Priceline.com maximises load factor; usage at the airlines' own websites maximises net yield.

Cyber competition trends

Another trend has been dubbed "competitive advantage homesteading". The prime example would appear to involve Priceline.com and its airline shareholder Delta. As part of its investment in the Internet company and its agreement to become the first major participant in its electronic seat sales, Delta insisted that Priceline.com would not offer competing airlines' capacity out of Atlanta, Delta's main hub. Northwest has complained and has targetted Atlanta with a traditional low-fares campaign. The Delta/Priceline.com agreement might have more critical implications for AirTran (formerly Valujet), which is also based at Atlanta.

In the case of the online travel agency Preview Travel (recently merged with the leading electronic agency Travelocity.com, which as part of Sabre has recently been spun off by AMR Corp.), there have been questions raised about the new commission rates being charged. Apparently, airlines have been told that either they will have to pay higher commissions or increase advertising to keep their listing on the website.

This is very reminiscent of the early 90s when American's Sabre CRS was ahead of the game, and American exploited the situation to the full by skewing the listing of its schedules against those of its competitors on the CRS. Eventually, legislation was brought in to regulate CRS practice. Also, rivals came up with their own competitive responses. Southwest, for example, quit Sabre to concentrate fully on direct sales, and consequently became the pioneer of website sales, which is a part of its great success story (see pages 10-15).

The same sort of process is developing in today's cyberworld. Those airlines with control of the dominant electronic distribution channels are exploiting their leads to the maximum, safe as yet from the attentions of the regulators. Other airlines are working hard on their strategic responses - the multi-airline portal planned by United, Delta, Northwest and Continental is an example.

Presumably the idea here is to fill the vacuum that is being created as traditional human travel agents are eliminated. Yet the travelling public will increasingly demand access to an industry-wide, neutral agency. Better that the four Major airlines (from three different global alliances) fill this vacuum than an industry newcomer.

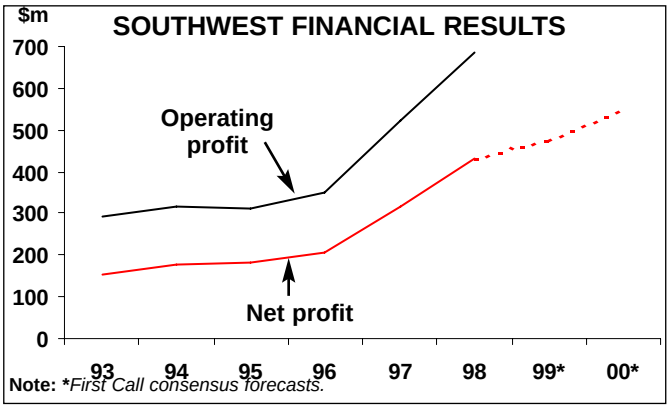
Southwest in the 21st century

Southwest has been the airline industry's commercial success story of the 20th century - consistently producing record earnings and the best profit margins in all the markets it has entered. Where will it go in the 21st century?

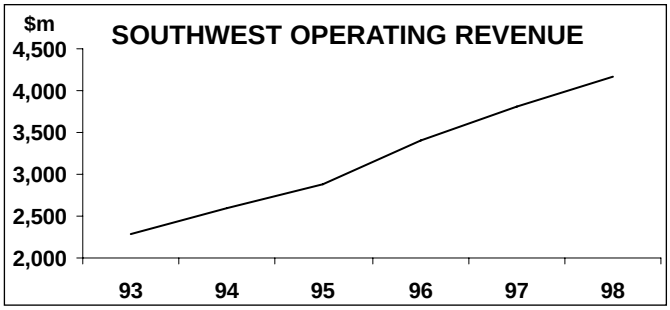
Southwest has been profitable for 27 consecutive years and has posted record earnings every year since 1991. Although its net income fell by 2.1% to $127m in the September quarter, this was due to a 32% increase in fuel prices. But revenues rose by 13%, the operating margin was still a spectacular 16.7% and the net margin was a near-record 10.3%. According to PaineWebber, fuel-neutral earnings were up by 13%.

The reason for the much higher than typical fuel-price hike was that Southwest entered the third quarter unhedged, just as prices surged. After locking in the low fuel prices enjoyed a year ago for the first halfof 1999, the carrier simply was not able secure those prices beyond the early summer.

The lack of hedging precipitated sharp falls in Southwest's share price in the late summer, which seemed unwarranted as otherwise the trends have continued to be favourable.



Note: *First Call consensus forecasts.



First, Southwest has done an excellent job in retaining its extremely low cost structure. Although costs per ASM rose by 4% to 7.55 cents in the September quarter, the 1999 figure will still be within the 7-7.5 cent range achieved throughout the 1990s. Excluding fuel, unit costs inched up by just 0.6% in the third quarter.

Second, the carrier has gone against the industry trend by posting strong and steady increases in unit revenues. Operating revenues per ASM have risen from around 8 cents in 1994 and 1995 to over 9 cents in 1999. Even the September quarter saw a 1.7% improvement to 9.07 cents, despite considerable industry-wide unit revenue pressures.

At the same time, load factors have continued to improve. Southwest's average load factor in 1999 was running about three points above the 1998 level. November actually saw a 5.7-point improvement to a record 69.8%. The unit revenue and load factor trends are impressive in the light of the carrier's rapid capacity expansion and head-on clashes with new competitors like Delta Express and MetroJet.

Southwest resumed its customary 10%-plus capacity growth last year, after a temporary dip to a 6.9% growth rate in 1998 due to the Boeing aircraft delivery delays (for which it received several million dollars as compensation). ASM growth accelerated throughout 1999, peaking at 13.9% in November and averaging 11-12% for the year.

While the strategy is to expand capacity by at least 10% annually, Southwest does not over-extend itself. Typically, most of the capacity is used to boost frequencies and only 2-3 new destinations are added each year.

This and the strong profits have enabled Southwest to maintain a healthy balance

sheet. It currently has around $500m in cash, plus an available and unused bank credit facility of $475m, and its long term debt is a modest $650m. Its leverage, including off-balance-sheet aircraft leases, is less than 50%. It enjoys top investment-grade credit ratings.

Rather exceptionally by US airline standards, Southwest has paid quarterly dividends for 23 years (though the actual amounts are small). A three-for-two stock split was implemented in July, and in September the company announced a $250m stock repurchase programme.

Unique low-cost strategy

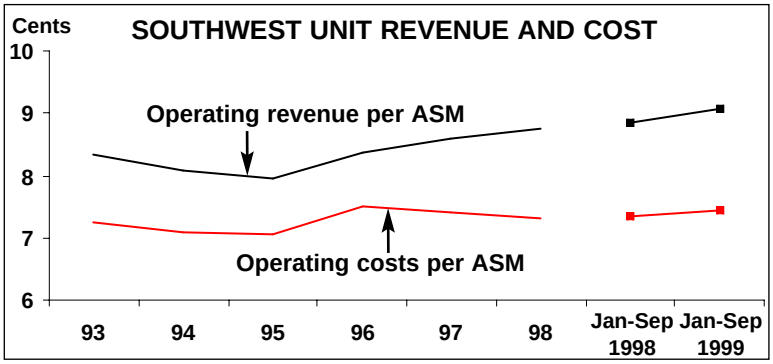
Many start-up carriers have copied Southwest's basic short haul, point-to-point, high-frequency, low fare strategy, but have failed miserably. No-one has been able to emulate Southwest's business model: low unit costs, a no-frills but otherwise exceptional service and a highly motivated work force.

The formula has worked so well for Southwest that there have been few, if any, changes. Just about the only strategic change in recent years has been the addition of more long haul flights, including coast-to-coast services. That was mainly to mitigate the effects of new ticket taxes, which penalise short haul operations, and is very much seen as a complementary strategy.

Around 90% of Southwest's flights are under two hours. The point-to-point operations have meant that 75-80% of its customers fly nonstop. High frequencies are a key part of the strategy - a typical business route has at least eight roundtrips a day and the biggest markets like Dallas-Houston and Oakland-Los Angeles have 25-40.

In contrast to a typical hub operation, where an airline might operate 500 flights a day from the hub and only 10-15 from spoke cities, Southwest operates numerous flights out of many different cities. At present it serves seven airports with over 100 flights a day. Were it not for the lack of connecting traffic, one could argue that Southwest is becoming a multi-hub network carrier.

Although Southwest has only a 5-6% share of the total US domestic traffic, it often



dominates the markets that it serves. It is the largest airline in 83 of its top 100 markets.

The airline attracts substantial volumes of business travellers because of its focus on things that matter most to that segment: high frequencies and punctuality. It has consistently come top or near-top of the DoT's on-time performance, baggage handling and customer satisfaction rankings. It also offers high service quality and a generous FFP.

However, the biggest selling point are the low fares. When choosing new cities, the primary criteria is to go to markets that are overpriced and underserved. A typical one-hour segment might have highly restricted lowest fares of $300. Southwest will enter that market with $70 or $80 fares, and the market will triple or quadruple within one or two years.

This is the "Southwest Effect" - a term coined by DoT officials in a 1993 study to describe the dramatic traffic growth that usually follows after Southwest enters a market with low fares. Everyone benefits, not just Southwest, as competitors reduce their fares and the low fares persuade people to fly who did not fly before. But Southwest takes care not to provoke larger competitors. It avoids its rivals' hubs, using secondary airports or older terminals that bigger airlines snub.

Its unit costs are so low because of the efficiencies offered by a uniform, young 737 fleet (average age 8.5 years), rapid 20-minute turnarounds (just 15 minutes for 60% of the flights), favourable labour contracts and the use of cheaper, less congested airports.

One of the things that really sets Southwest apart from its rivals is the way it treats its employees. The company goes to great lengths to attract the right-quality staff,

train them well and then motivate them to outperform their counterparts at other carriers.

Fortune magazine has included Southwest in its list of "the 100 best companies to work for in America" for two years in a row. The surveys have highlighted the importance of the personality cult around CEO Herb Kelleher in maintaining the corporate culture and the special "Southwest spirit". The company motto is "We take the competition seriously, but we don't take ourselves seriously".

Workers are also motivated through competitive salaries and a profit-sharing programme, which was the first in the industry when it was introduced in 1973. Last year the company paid out $120m (based on 1998 profits), which represented 13.7% of eligible salaries. Through the plan, employees own about 13% of the company's stock.

Success in the East

Much of Southwest's growth over the past three years has focused on the East coast, where it had no presence before it entered Florida and Providence (Rhode Island) in 1996. Although service to Baltimore had been introduced in 1993, growth there did not take off until opportunities arose to link that city with other East coast points.

The Florida operation was an immediate success and was built up rapidly. In June last year Southwest also introduced service to American's former hub at Raleigh/Durham. However, over the past 18 months the focus has been on the Northeast, where Southwest has opened three new cities: Manchester (Rhode Island) in June 1998, Islip on Long Island (New York) in March 1999 and Hartford (Connecticut) in October 1999.

Each of these cities has been linked with Baltimore, Chicago Midway, Nashville and one of the Florida points, and frequencies have been built up rapidly. The East coast region now accounts for 21% of Southwest's capacity (Southeast is 14% and Northeast 7%).

The process has elevated Baltimore to the ranks of the top ten Southwest cities, nearing the 100 daily flights mark this year. Southwest is now the largest carrier in terms of passenger boardings at Baltimore and has set up crew bases there.

All of this has created numerous direct competitive clashes with MetroJet, which also focuses on Baltimore. At times it has seemed as if the two were positively seeking each other's company. They entered the Baltimore-Manchester market within a week of one another, and Southwest announced Hartford soon after MetroJet unveiled plans to expand service from that city.

But US Airways' strong East coast position has helped MetroJet survive, while Southwest appears not to have felt any impact at all. The impression gained is that all of its new markets have performed well.

The "Southwest Effect" has been especially strong in New England. The Providence-Baltimore market grew from 57,000 passengers in 1996 to more than 500,000 in 1997. The Manchester-Baltimore market grew from just 3,300 in the third quarter of 1997 to 115,300 passengers a year later. And passenger volumes at Hartford's Bradley International Airport were up by 28.5% in November, the first month of Southwest's service, with a whole host of carriers recording strong growth.

Little surprise, therefore, that Southwest's presence is vied for by over 150 cities each year. There is no doubt that the airport authorities bend over backwards to accommodate its needs for quality facilities.

Southwest's success in New England has proved wrong earlier speculation that its costs would rise due to severe winter weather, congestion and other challenges posed by the Northeast environment. Strict adherence to the rule that the costs of operating from each airport must be in line with its overall cost structure has obviously helped.

Southwest also appears to have proved wrong the sceptics who argued that it could never succeed in serving the tough New York City area market from a place like Islip. Operations from there will be expanded to Nashville and Florida in February or March as more aircraft are delivered.

Fleet and financing plans

Southwest became the launch customer for the 737-700 in December 1997 and expected to receive its 57th aircraft by year-

end. The type will become its main workhorse and cater for growth over the next decade and beyond. The 737-700 will also significantly help it retain its unit cost advantage over competitors.

Since the original 1993 order, Southwest has come back several times to exercise options and place more orders. Most of the 85 currently on firm order are due for delivery over the next three years, so there will be more orders and used aircraft acquisitions to facilitate growth from 2002. The 737-700 options (currently 65) have delivery slots spread out from 2003 to 2006.

The fleet also includes 195 300-series, 35 200-series and 25 500-series 737s. The size of the 300-fleet has continued to increase slightly as a result of used aircraft acquisitions. The -200s are being gradually retired, though the intention now is to retain at least the hushkitted ones through this year. The airline generally keeps the -200s for 75,000 cycles or for 20-22 years.

Over the past couple of years, operating cash flow has accounted for about 90% of Southwest's capital spending. The carrier has been able to self-finance since 1995 and has not raised any fresh capital for all practical purposes in recent years. However, it did raise some external financing in the fourth quarter. This year's capital expenditure is expected to amount to $1bn, compared to $1.2bn in 1999.

Outlook for 2000 and beyond

Southwest's CFO Gary Kelly said at a recent conference that while there is reason to hope that the strong traffic and revenue trends would continue, it would be a "very difficult" first-half of the year for fuel price comparisons. This is because the carrier did an excellent job with hedging in the same period in 1999, rather than the price of fuel being outrageously high at present. However, the non-fuel cost structure looks very good and the aim is to drive those costs down further.

The carrier is fortunate in that, apart from talks with the fleet service workers (TWU) that began in early December, no other labour contracts of any significance will become amendable for another two years.

SOUTHWEST FLEET PLANS

	Current fleet	Orders	Options	Delivery/retirement schedule
737-200	35	0	0	
737-300	195	0	0	
737-500	25	0	0	
737-700	57	85	62	Firm orders by end of 2004, options in 2003-2006 (see below)
TOTAL	**312**	**85**	**62**	

Note: *More orders and used aircraft acquisitions likely from 2002.*

SOUTHWEST 737-700 FIRM ORDER AND OPTION DELIVERIES

	2000	2001	2002	2003	2004	2005	2006	TOTAL
Firm orders	31	23	21	5	5	-	-	85
Options	-	-	-	13	13	18	18	62
TOTAL	**31**	**23**	**21**	**18**	**18**	**18**	**18**	**147**

In late 1998 the pilots voted overwhelmingly to keep the second half of a 10-year contract signed in 1994, which froze the pay scale for the first five years in exchange for a substantial number of stock options.

The pilots felt that they had been compensated to a greater degree than would have been possible through pay rises, though sweetened terms over the second half of the contract also helped.

The addition of 31 737-700s and the retirement of two 737-200s will lead to ASM growth of around 12% this year. At least two new cities, and possibly as many as four, will be added to the network in 2000.

The current First Call consensus forecast is a net profit of $1.02 per share for 2000, which would represent a 14.6% increase over the 1999estimate of 89 cents. Most analysts currently rate Southwest as a "strong buy", which reflects its low share price and the usual rally in airline shares anticipated over the winter and the early spring.

But Southwest obviously possesses many attributes that give it unique long-term potential in an industry characterised by volatility. The key ones are its consistent profit record, unaffected by the economic cycle, and proven business formula. It is also well-positioned for the Internet age (being the first major to offer online bookings and, before that, the first to go ticketless systemwide). CIBC analyst Sal Colak recently suggested that investors should view Southwest as the only long-term hold in the airline sector.

Succession has become slightly more of an issue since 68-year-old Kelleher underwent treatment for prostate cancer last year. However, Kelleher appears to have made a full recovery and has no plans to retire. Efforts to function more smoothly as a team may have made his role less critical.

Given its success in the domestic market, the fact that its network now spans the entire continental US and the stated long-term aim to grow by at least 10% annually, when will Southwest go international?

The standard answer, reiterated by Kelly, is that there are still lots of good growth opportunities or "a good 5-10 years of development to do" in the US. It is much easier for Southwest to contemplate expansion in markets that it knows and where the addition of new flights and cities also helps to develop the existing route system. It does not know the international business and could not leverage such expansion on existing markets.

Southwest has identified "at least another 55" potential US cities (and it is worth noting that it has taken 25 years to get to its present total of 55). The cities to be added are obviously getting smaller, but the experience has been encouraging. For example, Jackson (Mississippi), which was added in 1997, is very profitable with 10-12 daily flights.

While Canada and Mexico would not pose too much of a risk and could be served with the 737-700s, Kelly says that opportunities still look better in the US at present. However, he believes that international expansion will follow in the longer term.

Southwest has no alliances or codeshares in place. First, it simply does not focus on connecting passengers. Second, it does not want to change its schedules or operating practices, which facilitate quick turnarounds and maximise aircraft utilisation, to optimise connections with an alliance partner. Third, it does not want to jeopardise on-time performance or service quality (though it would still consider proposals that add incremental traffic).

By Heini Nuutinen

Russian airlines: painful experiment with capitalism continues

The collapse of the rouble in August 1998 triggered a crisis for Russia's too many airlines. Passenger volumes collapsed and many flights in September and October of that year operated with load factors of 15% or less. The year ended with just 22.4m passengers being carried, an overall drop of some 11% on 1997.

With the economy in recession, at least until oil prices began to surge in September, 1999 will also show a decline - the ninth successive year of falling passenger numbers. The revenue position is, if anything, even worse. Before the crisis, Russia's airlines were generally achieving a revenue per seat hour sold (the local measurement) of the equivalent of $50. Now, with kerosene prices up at very high levels, just $30 is coming in, and load factors are stuck at about 50% compared to around 70% pre-crisis.

Freight figures are available, but they are unduly influenced by the customs and taxation systems. A load of up to 35 tonnes need not be inspected, and taxes and duties are charged at a low figure; a larger weight requires inspection, involving a delay usually of several days plus the appropriate, higher tax rates. Consequently, official tonnages are very questionable.

There is increasing concern about Russia's ageing airliner stock. Up until now, the plentiful supply of aircraft remaining after the collapse of the Soviet Union, combined with the fall in traffic levels, has meant that the fleet could meet requirements. But aircraft age in a combination of flight hours, cycles and years, is beginning to take its toll. In theory, this should offer an opportunity for Western marketers of used aircraft such as the 727, older 737s and DC-9s. However, several factors work against this:

- First, there is little infrastructure to sup-

port non-Soviet aircraft in terms of maintenance or spare parts, or even hangars;

- Second, few airports have runways of sufficient concrete strength to allow use by single axle undercarriages;
- Third, very few airlines have either the cash to buy or the balance sheet to borrow for aircraft, and Russia's banks do not need to risk lending to airlines when the government will take all the funds they can offer at low risk and high returns.

Although there are reasonable choices available from CIS designers and manufacturers, again there are few funds available either to build new aircraft or for airlines to buy or lease them. And there is little sign of any leadership coming from the government or its civil aviation authority, the Federal Service of Air Transport (FSAT). In Russia, where most of the passenger carriers are still, to some extent, owned by the State, and where major decisions cannot be taken without State approval, this leadership is necessary.

The top ten airlines carried just over 12m passengers, almost 60% of the 1998 total, and the top 45 just under 20m or 87%, which doesn't leave much for the other 73 carriers.

ARIA - Aeroflot Russian International Airlines

Aeroflot ended 1998 with passenger numbers up by 14% on the previous year, at 4.45m, but it is not likely to exceed that figure in 1999.

It has now received all ten 737-400s on order, plus two new 767-300ERs. It has returned the two 767s leased in 1994, and should have received the extra two by the end of 1999. It added an eleventh A310 in mid year, and accepted delivery of an A310 simulator on "nominal" lease terms in November. This may well indicate an interest in adding further Airbus types to the fleet.

ARIA already announced plans to sell off its fleet of Tu-154s and stated that it is planning to build up its domestic operations. So far, it has set up "daughter" airlines in Nizhne Novgorod and Samara in partnership with local interests and taken options on 40 new Antonov An-I40 regional turboprops with Western engines. As the ExIm Bank funds have not yet arrived, it is still awaiting delivery of the first cargo Il-96T airliner. And, as the first production passenger Il-96M hasn not yet flown, (also due to the lack of ExIm funds) it has decided to lease a further six Il-96-300s to fill the gap.

* Chief Executive: Valeri M Okulov
* Address: Moscow 125167,

MAIN RUSSIAN AIRLINE FLEETS

	ARIA	Vnukovo	Pulkovo	Trans-aero	Sibir	Kras Air	Kolavia	Kuban	Domode-dovo AL	Tyumen-aviatrans	Total
IL-96-300	6(6)								3		**9(6)**
IL-96M	(17)										**(17)**
IL-96T	(3)										**(3)**
IL-86	17	12	9	1	7	4					**50**
IL-76TD	12					11			4		**27**
IL-62	5					6			17		**28**
TU-154	29	23	22		15	18	7			6	**120**
TU-134	12		11		1		4				**28**
TU-204		7									**7**
TU-214					(2)						**(2)**
AN-2										58	**58**
AN-24						4		3		10	**17**
AN-26						4		3		12	**19**
YAK-40						1	1			22	**24**
YAK-42								11			**11**
A310-300	11										**11**
737-200				5							**5**
737-400	10										**10**
737-700				2(2)							**2(2)**
767-300ER	2(2)										**2(2)**
777-200	2										**2**
DC-10-30F	1										**1**
Total	**107(28)**	**42**	**42**	**8(2)**	**23(2)**	**48**	**12**	**17**	**24**	**108**	**431(32)**

Leningradski Prospekt 37
* Tel: (095) 752 9001 Fax: (095) 155 6647

Vnukovo Airlines

Vnukovo had a traumatic 1999. Although it retains its position as the second largest carrier in Russia, its strategy over the previous two years of trying to beat off competition by cutting fares has only resulted in serious losses and has not deterred its competitors. Thus, in May it was forced to ask the CEO of a rival carrier, Sibir, to take on the same position in Vnukovo with a view to merging the two airlines. Three months later he pulled out, and Vnukovo found a new CEO, Alexander Krasnenker, the former commercial director of Aeroflot. He appears to have started to take the decisions necessary to restore the carrier's fortunes, but a lot more is needed. Traffic fell by some 7% in 1998 to 1.6m passengers, and a total of only 1.3m is expected for 1999.

* Chief Executive: Alexander Krasnenker
* Address (Headquarters): Moscow 103027, Vnukovo Airport
* Tel: (095) 436 2576. Fax: (095) 436 2572

Pulkovo Aviation Complex

Despite a 4% drop in traffic in 1998, the St. Petersburg-based carrier rose to third position for passenger numbers with a total of 1.37m boardings. In Russian accounting terms, which relate more to cash inflows/outflows than to the Western profit and loss concepts, the combined airline and airport showed a small loss for 1998, but this includes considerable expenditure on the airport infrastructure.

The airline is regarded as stable and well-run, and is gradually replacing its fleet with newer examples of its current types.

* Chief Executive: Boris Demchenko
* Address: 196210 St. Petersburg, Pilot St., 18/4
* Tel: (812) 122 9924 Fax: (812) 104 3702

Transaero

The largest of Russia's "non Aeroflot' airlines, Transaero was the one hardest hit by the country's currency collapse in 1998 - passengers dropped by 13%, to 1.35m, the first fall since its foundation in 1992. The carrier returned much of its fleet, by agreement, to its lessors. It is left with its (owned) Il-86 and seven 737s. It has reduced its average stage length to medium range, by dropping its US and Far Eastern destinations. 1999 will see another fall in traffic, but it improved load factors, and reported profits for the first time in the first half of 1999. Transaero will add two more 737-700s early in 2000, and is looking at other fleet options, including the possibility of adding Tu-214s (a higher weight Tu-204) for reopening some of the closed routes.

* Chief Executive: Nikolai Kozhevnikov
* Address: 103340 Moscow, Sheremetyevo 1 Airport
* Tel: (095) 578 5060 Fax: (095) 578 5038

Sibir

The airline's new management has reported small growth in passenger numbers (up 2%, up to 0.62m in 1998, probably a little more in 1999) despite the fact that overall Siberian numbers fell heavily in the year. Sibir claims that this was achieved by adjusting schedules to the times required by the customers, by improving service in terms of cabin staff friendliness, catering, and cleanliness, and by adding in services from other towns and cities in western Siberia. Its routes to Germany, the Middle East and China all are growing.

It has taken the unusual step of handing over its unprofitable local services, plus the aircraft serving these routes to another Novosibirsk-based airline. With the only overhaul hangar in Siberia, it has begun to offer excess capacity (after attending to its own fleet needs) to other airlines in the region.

In Russian accounting terms, it broke even in 1998, but this included the payment for two additional aircraft, modernisation of the hangar, and moving its creditors from two to three months in arrears to an up-to-date situation, with fuel prepaid for one month (such things are important in even beginning to understand Russian accounts). Sibir has recently reached agreement with the manufacturer to lease an initial two Tu-214s for delivery in mid 2000.

* Chief Executive: Vyacheslav Filiev

* Address: 663115 Novosibirsk Region, Tolmachevo Airport
* Tel: (3832) 22 75 72 Fax: (3832) 32 22 71

Kras Air (Krasnoyarsk Airlines)

Despite a 5% fall in traffic to 0.6m passengers in 1998, Kras Air rose from eighth to sixth place in the volume of traffic carried in 1998, and reported profits. Traffic is expected to fall further in 1999.

* Chief Executive: Boris Abramovjch
* Address: 663020 Krasnoyarsk, Yermelianovo Airport
* Tel: (3912) 23 63 66 Fax: 3912 24 48 95

Kolavia (Kogalym Avia)

Founded in 1993 as a joint venture between a major Russian oil company and the oil city of Kogalym: 60% of its business comes from the oil industry, Kolavia has grown to take the seventh place in traffic volumes for I998, and it has done this with a staff of just 350 and with a fleet of just six Tu-154s plus a single Yak 40 used for executive charters. It also has some helicopters for aerial work and to carry oil workers to remote sites. Traffic in 1998 rose by 25% to 0.54m (this included a proportion of holiday passengers, which will not be repeated in 1999 due to the economic problems). Kolavia has recently added four Tu-134s to its fleet.

* Chief Executive: Nikolai Zolnikov
* Address: 626481 Tyumen Region, Kogalym Airport
* Tel: (34867) 23 101 Fax: (34867) 29 695

Kuban Airlines

The Stavropol-based regional airline rose to eighth position for 1998 by carrying 0.5m passengers, even though this represented a fall of 17% on 1997. It flies a fleet mainly of Yak 42s on scheduled and charter services in south-west Russia.

* Chief Executive: Ivan Babichev
* Address: 350026 Krasnodar, Airport
* Tel: (8612) 55 25 08 Fax: (8612) 37 38 11

Domodedovo Airlines

Domodedovo is another carrier that saw a heavy fall in passenger numbers after the financial crisis - the 1998 total was 0.49m, some 22% down on the previous year. Although this resulted in a small loss for the year, the airline managed to complete the full payment for its third Il-96-300 by early 1999, and took delivery in May. It plans to develop its trans-Siberia routes, and to open a new Moscow-Macau service in Spring 2000.

* Chief Executive: Alexander Akimov
* Address: 103325 Moscow, Domodedovo Airport
* Tel: (095) 323 8991 Fax: (095) 952 8691

Tyumenaviatrans

With a drop of 32%to 0.48m passengers, Tyumenaviatrans fell from sixth to tenth position in 1998. But the other airline based in the city, Tyumen Airlines, fared even worse, with a 48% decline to 0.33m. 1999 results will be worse. However, the company also has a large aerial work department, mainly for the extensive oil interests in its region.

* Chief Executive: Vladimir Illarionov
* Address: 625025 Tyumen, Plekhanovo Airport
* Tel: (3452) 23 21 94 Fax (3452) 23 23 95

Others

Other significant players in the Russian aviation market include the following relatively successful operators.

- **Gazpromavia**, operating mainly gas and energy industry related services, more than doubled traffic to 0.3m in 1998.
- **Mavial,** based in the far eastern city of Magadan, after several years of major decline traffic rose by 85% in 1998 to 0.24m.
- **Karat,** offering a "no frills" service from Moscow to cities in western Russia, grew by 94% to 0.20m in 1998.

By contrast, airlines in steep decline include the following:

- **BAL-Bashkiri,** the airline of the Republic of Bashkortostan, lost (not literally) 45% of its passengers in 1998 - traffic was down to 0.4m.
- **Omskavla's** traffic fell by 40% to 146,500.

Sakha National Air, the airline of the far eastern Republic of Sakha/Yakutia lost 73% of its traffic, carrying 0.12m passengers in 1998.

- **Komiavia**, the Komi Republic's major airline, saw tarrfic fall by 75% to 0.1m; it has now been relegated to domestic routes in Komi, and its other services have been transferred to rival Komiinteravia.

By Paul Duffy

Maintenance accounting as a strategic tool

Cost reduction is not the only way in which engineering and maintenance (E&M) can save money. This article makes the case that appropriate measurement and attribution of maintenance costs can deliver money to the bottom line, because it leads to decision making that improves overall airline profitability.

Contrary to the view of many a harried maintenance manager on the hangar floor or ramp, airlines do not measure maintenance costs primarily to support annual exchanges of charges and recriminations at executive management meetings, nor to amuse the underlings in the finance department. In fact, airlines measure E&M costs in detail for four important reasons.

The first reason is to comply with regulatory and financial reporting requirements. Most airline maintenance costing capabilities have been built around this need, and are reasonably good in producing accurate, timely, and representative summaries of cost (e.g., US DoT Form 41).

The second reason is more interesting, as it affects the boundaries between the airline and its suppliers. Airlines measure costs to understand productivity trends internally, in economic terms, over time. Time series data of labour and materials costs can indicate the need for the introduction of additional cost controls, capital investment, or work process redesign.

The third reason relates to suppliers very directly: to identify and isolate operations for outsourcing, and conversely, to identify operations to be brought back in, as well as opportunities to profitably sell maintenance work to other airlines.

The final reason is because a full understanding of correctly attributed costs can affect strategic decisions. Consider, for instance, the addition of a distant destination to an international carrier's route network. Served three times per week, it looks narrowly profitable with average allocations of maintenance costs. Its actual profitability, however, may hinge on the way that maintenance costs are incurred and reported. Is the line maintenance capability to be performed by another carrier, or will the airline put a skeleton staff in place, and then try to fill their time by selling their services to other carriers? Will the new station require pre-positioned rotables? What are the chances of an AOG, its likely passenger cost impact, and the maintenance cost of resolving it? A rational decision to add, or not to add, the new station will depend on the airline's ability to provide clear answers to these questions.

From allocation to attribution

Costing maintenance work is difficult, and airlines have struggled for years to produce timely reports that represent costs in a meaningful way. The concept of cost representation is important since only a fraction of costs within any maintenance activity is directly attributable to any particular operation. Some cost categories (e.g., direct labour on the check line or in a repair shop) may be 80% attributable, with only minor allocations. Other categories (e.g., line maintenance labour, engineering support) may represent allocations almost entirely.

As a starting point in measuring maintenance costs, it is important to understand how costs are caused. The easy category includes the direct costs: the price of parts actually installed, the benefits-loaded cost of the time the mechanics expended in installing them, etc. Clearly, these costs are caused by the direct operations with which they are associated. At most airlines, everything else is handled through a system of overheads, which often are allocated based on the direct costs.

The recent trend to outsourcing more maintenance activity can be seen in this light, since it converts a combination of direct and indirect costs (of, for instance, overhauling an engine) into pure direct costs (removing and reinstalling an engine overhauled by a third party provider).

In reality, indirect costs are caused by some combination of three discrete factors:

- Existence of the maintenance function (function costs);
- . Performing a particular capability internally (capability costs); or
- Making a particular service available (availability costs).

Let us turn now to a more complete definition of each of the cost categories that we propose.

Direct costs

Simply defined, direct costs are those costs (usually, direct labour and materials) which are immediately and exclusively attributable to a particular unit of output. This output is normally one of the core production responsibilities of the unit. Therefore, a mechanic's labour in repairing a particular piece of avionics equipment is a direct cost, while a planner's labour in scheduling such pieces of equipment through the shop normally is not.

Function costs

The best way to categorise costs is to think about how you would eliminate them. Function costs remain as long as there is an E&M function. They include the head of E&M and his staff, some minimal engineering, planning and quality control capability, and a bit of infrastructure. Airlines that outsource engines, components, heavy checks, and line maintenance at outstations will find that most of their remaining costs are function costs.

Capability costs

Capability costs are those associated with providing a particular internal service that is part of the normal production of the E&M function. For example, handling landing gear in-house rather than outsourcing requires the existence of a shop, physical assets (tools, plating baths, etc.), and a management and planning capability in its own right. It also causes other costs to be incurred, including additional engineering capacity, additional materials support, chemical disposal costs, a portion of the total finance and administration capability, and so on. These costs go away (i.e., are transformed into direct costs) at the point when the airline outsources the function.

Capability costs are largely predictable on a tactical as well as a strategic basis. If an airline has an engine shop, it will produce engines. The number of engines it will produce, and the work scopes associated with them, are largely predictable

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Availability costs

Whereas capability costs are prominent in production settings, such as check lines and component shops, availability costs predominate in the functions that look and behave like fire departments: notably, the emergency response centre and line maintenance. Once everything possible has been done to match these staff with workload drivers (e.g., adjusting shifts to flight banks), airlines don't care how busy they are, as long as they are available. If the line mechanics at Station A turned 20 flights and resolved 30 snags on a particular day, they were not more meaningfully productive than Station B mechanics, who turned 20 flights but resolved only 15 snags. Tomorrow, the numbers might reverse; if both stations have the right staff to turn 20 aircraft per day, and no more, both operations are optimally efficient. Organisations that function in this way show high proportions of availability costs.

Better than tradition

Expanding traditional direct/indirect cost thinking to four categories (function, capability, availability, and direct) requires some getting used to. Accounting systems aren't set up along similar lines. Staff don't think in these terms. Within the four categories, some level of arbitrary allocation still is required. However, the benefits in supporting decisions can be considerable, although this approach has mainly been used, up to this point, mostly in consulting assignments or one-off internal projects.

A simple example illustrates the difference in decision making that might result from a review of attributed, as opposed to allocated, costs. Say the overhaul of a particular component costs $1,800 in direct labour and materials. The airline's current practice, based on overall financial performance, is to allocate indirect costs by applying a factor of 0.8 to direct costs. The result is an internal cost delivered cost of $3,240. If the airline knows of a third party provider that can turn the units for $2,800 each, outsourcing looks like a viable alternative.

It happens, however, that in this case the shop operates with a lot of fully depreciated equipment, and few chemicals and other indirect materials. It requires little management, no independent planning capability. The $1,800 in direct costs stand, but the real capability costs per unit attributable to the operation are $400. A general allocation technique masks the fact that other, more complicated shops contribute proportionally more to the department's indirects. Function costs still are essentially an allocation, but at $150 per unit are a small proportion of total costs. The result of this more detailed review of costs indicates a more accurate internal cost of $2,350 per unit. On this basis, outsourcing this component turns from looking like a promising idea to looking like a bad one. Implicitly, the high overall indirect levels suggest that there are higher potential outsourcing targets elsewhere in the airline.

By Mark Shields
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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
1998	188.3	120.3	63.9	194.2	149.7	77.1	135.4	100.6	74.3	453.6	344.2	75.9	673.2	484.8	72.0
Oct 99	17.6	11.5	65.3	19.8	15.3	77.2	11.6	9.4	81.1	43.0	33.5	77.9	63.7	47.1	74.0
Ann. chng	8.6%	7.4%	-0.7	14.2%	10.4%	-2.6	-0.6%	5.8%	5.0	9.1%	8.9%	-0.2	9.1%	8.9%	-0.2
Jan-Oct 99	168.1	107.2	63.8	184.1	142.5	77.4	112.2	86.9	77.5	412.1	313.8	76.1	609.1	440.7	72.4
Ann. chng	6.5%	4.3%	-1.3	13.2%	10.9%	-1.6	-1.0%	2.8%	2.9	9.0%	7.8%	-0.9	8.4%	7.3%	-0.8

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 %
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
1998	961.0	679.1	70.7	150.3	118.5	78.8	112.1	81.6	72.8	84.0	52.3	62.3	346.4	252.4	72.9
Oct 99	87.4	60.4	69.2										31.1	23.6	75.8
Ann. chng	5.6%	5.8%	0.2										4.8%	9.0%	2.9
Jan-Oct 99	839.2	593.1	70.7										300.8	226.8	75.4
Ann. chng	5.0%	4.3%	-0.4										3.6%	5.8%	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 %
1992	1,305	837	64.2	1,711	1,151	67.3	3,016	1,987	65.9	3.0	4.6	15.1	15.3	9.5	10.5
1993	1,349	855	63.3	1,785	1,205	67.5	3,135	2,060	65.7	3.4	2.0	4.4	4.8	3.9	3.6
1994	1,410	922	65.3	1,909	1,320	69.1	3,318	2,240	67.5	4.6	7.9	6.9	9.4	5.9	8.8
1995	1,468	970	66.1	2,070	1,444	69.8	3,537	2,414	68.3	4.1	5.4	8.5	9.4	6.6	7.8
1996	1,540	1,043	67.7	2,211	1,559	70.5	3,751	2,602	79.4	4.9	7.4	6.8	8.0	6.0	7.8
1997	1,584	1,089	68.8	2,346	1,672	71.3	3,930	2,763	70.3	2.9	4.5	6.1	7.2	4.8	6.1
1998	1,638	1,147	70.0	2,428	1,709	70.4	4,067	2,856	70.3	3.4	5.2	3.5	2.2	3.4	3.4
***1999**	1,733	1,196	69.0	2,557	1,814	71.0	4,290	3,009	70.2	5.9	4.3	5.3	6.1	5.5	5.4
***2000**	1,810	1,244	68.7	2,715	1,922	70.8	4,525	3,165	70.0	4.4	4.0	6.2	5.9	5.5	5.2
***2001**	1,868	1,273	68.1	2,837	1,992	70.2	4,706	3,265	69.4	3.3	2.3	4.5	3.7	4.0	3.2
***2002**	1,923	1,291	67.1	2,961	2,049	69.2	4,883	3,339	68.4	2.9	1.4	4.3	2.8	3.8	2.3
***2003**	1,973	1,353	68.6	3,093	2,187	70.7	5,066	3,540	69.9	2.6	4.8	4.5	6.7	3.7	6.0

Note: * = Forecast; ICAO traffic includes charters. **Source:** Airline Monitor, July 1999.

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	122	115	113	112	109	173	150	152	150	135	196	144	147	133	121
***1999**	124	116	115	115	109	179	154	159	156	140	211	150	156	141	124

Note: * = Forecast; Real = inflation adjusted. **Source:** OECD Economic Outlook, December 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$)						LIBOR
	US	UK	Germany	France	Japan		UK	Germ.	France	Switz.	Euro**	Japan	6 month Euro-$
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	120	124	115	109	**1998**	0.603	1.759	5.898	1.450	0.896	130.8	5.51%***
***1999**	125	122	126	116	108	**Dec 1999**	0.621	1.938	6.498	1.587	1.010	103.3	5.92%***

Note: * = Forecast. **Source:** OECD Economic Outlook, December 1998. **Euro rate quoted from January 1999 onwards. 1990-1998 historical rates quote ECU. *** = $ LIBOR BBA London interbank fixing six month rate.

WET LEASE RATES

	ACMI RATE $/BLOCK HOUR		ACMI RATE $/BLOCK HOUR		ACMI RATE $/BLOCK HOUR		CMI RATE $/BLOCK HOUR
A320-200	2,750-3,500	**737-300**	2,100-2,750	**BAe 146-100**	1,650-1,800	**F-70**	1,500-1,750
A320-200 (AI)	5,350	**737-400**	2,750-3,250	**BAe 146-200**	2,350-2,500	**F-100**	2,500-3,250
A321-100	2,800-3,600	**737-400** (AI)	4,450	**BAe 146-300**	2,750-3,200		
A330-200	3,250-3,500	**757-200ER**	3,350-4,750				
		757-200ER (AI)	6,950-7850				

Notes: ACMI = Wet lease rate (aircraft, crew, maintenance & insurance). AI=Inclusive of all operating charges
Source: Alan Hodder.

JET AND TURBOPROP ORDERS

	Date	Buyer	Order	Price	Delivery	Other information/engines
ATR	-					
Airbus	Dec 14	Cathay Pacific	3 A330-300s		1Q01	Increased MTOW of 233 tonnes
	Dec 15	SAS	4 A330-300s,			
			6 A340-300s	$1.18bn	01-04	+ 7 options
BAe	-					
Boeing	Dec 14	Pembroke	15 717-200s		3Q00	
	Dec 15	GECAS	15 767s, 5 747-400Fs			
Bombardier	Dec 22	SkyWest	20 CRJ200	$470m	Nov 00 on	
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 98	4,229	3,802	427	290	62,405.4	41,846.6	67.1	6.78	6.09	19,267	9,207.0	4,889.4	53.1	87,569
Apr-Jun 98	4,497	3,889	608	409	64,471.8	46,075.9	71.5	6.98	6.03	20,901	9,512.3	5,317.6	55.9	87,076
Jul-Sep 98	4,583	3,958	625	433	65,920.1	48,093.9	73.0	6.95	6.00	21,457	9,739.3	5,466.1	56.1	89,078
Oct-Dec 98	4,152	3,857	295	182	64,317.3	43,811.6	68.1	6.46	6.00	19,805	9,526.7	5,060.1	53.1	90,460
Jan-Mar 99	3,991	3,954	37	158	62,624.3	41,835.4	66.8	6.37	6.31					
Apr-Jun 99	4,528	4,120	408	268	67,313.8	47,945.9	71.2	6.73	6.12					
Jul-Sep 99	4,629	4,603	547	279	67,972.2	48,792.9	71.8	6.88	6.26					
America West														
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	1,228.9	733.0	59.7	11,645
Jul-Sep 98	499	453	46	22	9,884.3	7,108.3	71.9	5.05	4.58	4,665	1,240.4	746.9	60.2	11,600
Oct-Dec 98	507	470	37	20	10,037.2	6,491.9	64.7	5.05	4.68	4,335	1,261.2	688.1	54.6	11,687
Jan-Mar 99	520	469	51	26	10,135.4	6,485.5	64.0	5.13	4.63	4,263				
Apr-Jun 99	570	494	76	42	10,446.0	7,204.8	69.0	5.46	4.73	4,724				
Jul-Sep 99	553	511	41	22	10,522.9	7502.8	71.3	5.26	4.86	4,896				
Continental														
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	3,629.6	2,399.3	66.1	39,170
Jul-Sep 98	2,116	1,973	143	73	31,609.9	24,049.4	76.1	6.69	6.24	11,655	3,801.8	2,542.9	66.9	40,082
Oct-Dec 98	1,945	1,817	128	66	30,557.4	21,273.3	69.6	6.37	5.95	10,637	3,664.5	2,339.0	63.8	41,118
Jan-Mar 99	2,056	1,896	160	84	30,938.8	22,107.0	71.5	6.65	6.13	12,174				
Apr-Jun 99	2,198	1,942	256	137	32,448.3	24,009.1	74.0	6.77	5.98	11,493				
Jul-Sep 99	2,283	2,071	21	110	34,711.0	26,380.3	76.0	6.58	5.97	11,922				
Delta														
Jan-Mar 98	3,390	3,053	337	195	54,782.2	37,619.0	68.7	6.19	5.57	24,572	7,766.6	4.448.9	57.3	71,962
Apr-Jun 98	3,761	3,167	594	362	57,175.5	43,502.6	76.1	6.58	5.54	27,536	8,189.9	5,049.5	61.7	74,116
Jul-Sep 98	3,802	3,250	552	327	59,017.9	45,242.3	76.7	6.44	5.51	27,575	8,486.8	5,196.9	61.2	75,722
Oct-Dec 98	3,448	3,128	320	194	57,810.9	39,947.7	69.1	5.96	5.41	25,531	8,244.1	4,699.3	57.0	76,649
Jan-Mar 99	3,504	3,148	356	216	56,050.3	39,163.9	69.9	6.25	5.62					
Apr-Jun 99	3,957	3,315	642	364	57,957.3	43,422.1	74.9	6.83	5.72					
Jul-Sep 99	3,877	3,527	350	352	60,710.8	45,528.3	75.0	6.39	5.81	27,183		5,258.2		72,300
Northwest														
Jan-Mar 98	2,429	2,273	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	2,475	2,355	120	49	38,332.7	29,533.7	77.0	6.46	6.14	13,676	6,102.8	3,745.5	61.4	51,264
Jul-Sep 98	1,928	2,204	-276	-224	32,406.3	24,295.8	75.0	5.95	6.80	11,148	5,107.4	3,058.6	59.9	50,654
Oct-Dec 98	2,212	2,404	-192	-181	37,947.0	26,534.3	69.9	5.83	6.34	12,962	6,125.2	3,588.9	58.6	50,503
Jan-Mar 99	2,281	2,295	-14	-29	37,041.3	26,271.8	70.9	6.16	6.20					
Apr-Jun 99	2,597	2,333	264	120	40,541.5	30,900.2	76.2	6.41	5.75					
Jul-Sep 99	2,843	2,472	370	180	43,194.5	33,562.1	77.7	6.58	5.73					
Southwest														
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	2,394.0	1,378.0	57.6	24,807
Jul-Sep 98	1,095	891	204	130	19,762.1	13,620.3	68.9	5.54	4.51	13,681	2,519.0	1,420.4	56.4	25,428
Oct-Dec 98	1,047	888	159	100	19,763.0	12,603.4	63.8	5.30	4.49	13,291	2,504.1	1,317.4	52.6	26,296
Jan-Mar 99	1,076	909	167	96	19,944.0	12,949.2	64.9	5.40	4.56	12,934				
Apr-Jun 99	1,220	966	254	158	20,836.9	15,241.7	73.1	5.85	4.64	14,817				
Jul-Sep 99	1,235	1,029	206	127	21,903.8	15,464.0	70.6	5.64	4.70	14,932				
TWA														
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	6,417	1,979.0	1,186.2	59.9	22,147
Jul-Sep 98	863	839	24	-5	14,293.8	10,531.3	73.7	6.04	5.87	6,273	1,999.7	1,150.0	57.5	21,848
Oct-Dec 98	747	813	-66	-79	13,452.4	8,731.6	64.9	5.55	6.04	5,574	1,863.7	982.8	52.7	21,321
Jan-Mar 99	764	802	-38	-22	13,352.4	9,205.2	68.9	5.72	6.01					
Apr-Jun 99	866	848	18	-6	14,274.4	11,130.9	78.0	6.07	5.94					
Jul-Sep 99	876	935	-59	-54	15,188.0	11,524.3	75.9	5.76	6.16	6,928	1,957.0	1,248.6	63.8	20,982
United														
Jan-Mar 98	4,055	3,932	123	61	66,393.3	44,613.0	67.2	6.11	5.92	19,316	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	21,935	10,453.0	6,202.6	59.3	94,064
Jul-Sep 98	4,783	4,088	695	425	73,913.5	56,283.7	76.1	6.47	5.53	23,933	11,255.3	6,847.4	60.8	94,270
Oct-Dec 98	4,281	4,090	191	54	70,620.9	49,484.4	70.1	6.06	5.79	21,616	10,774.4	6,182.8	57.4	94,903
Jan-Mar 99	4,160	4,014	146	78	67,994.5	46,899.8	69.0	6.12	5.90					
Apr-Jun 99	4,541	4,108	433	669	71,573.6	50,198.9	70.1	6.34	5.74					
Jul-Sep 99	4,845	4,226	619	359	74,043.0	55,628.0	75.1	6.54	5.71	23,765				96,700
US Airways														
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	15,302	3,107.6	1,895.9	61.0	40,846
Jul-Sep 98	2,208	1,938	270	142	23,267.3	17,639.5	75.8	9.49	8.33	15,290	3,166.1	1,898.2	60.0	40,660
Oct-Dec 98	2,121	1,943	178	104	23,318.8	16,112.3	69.1	9.10	8.33	14,202	3,171.1	1,754.5	55.3	40,664
Jan-Mar 99	2,072	1,983	89	46	22,745.8	15,405.8	67.7	9.11	8.72					
Apr-Jun 99	2,286	2,007	279	317	23,891.7	17,557.5	73.5	9.57	8.40					
Jul-Sep 99	2,102	2,213	-111	-85	23,006.6	17,205.6	71.7	8.76	9.22	13,984				40,613
ANA														
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				
Oct-Dec 98														
Jan-Mar 99														
Apr-Jun 99														
Jul-Sep 99														
Cathay Pacific														
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	SIX MONTH FIGURES													
Oct-Dec 98	1,769	1,713	56	-45	31,367.0	21,173.0	67.5	5.64	5.46		5,649.0	3,847.0	68.1	
Jan-Mar 99	SIX MONTH FIGURES													
Apr-Jun 99	1,695	1,664	31	17	28,801.0	19,325.5	67.1	5.89	5.78		5,267	3,581.6	68.0	
Jul-Sep 99														
JAL														
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	SIX MONTH FIGURES													
Jul-Sep 98	4,463	4,262	201	133	58,439.5	40,413.9	69.2	7.64	7.29	16,008	8,959.7	5,725.4	63.9	
Oct-Dec 98														
Jan-Mar 99														
Apr-Jun 99														
Jul-Sep 99														

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

	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
Korean Air														
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	TWELVE MONTH FIGURES													
Oct-Dec 98	**3,283**	3,063	219	212	58,246.4	40,190.3	69.0	5.64	5.26	25,557		9,480.0		17,050
Jan-Mar 99														
Apr-Jun 99														
Jul-Sep 99														
Malaysian														
Jan-Mar 98														
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	860	958	-98	-11			57.2							
Oct-Dec 98														
Jan-Mar 99														
Apr-Jun 99														
Jul-Sep 99														
Singapore														
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	
Oct-Dec 98	SIX MONTH FIGURES													
Jan-Mar 99	2,421	2,130	291	341	41,725.5	30,843.7	74.9	5.80	5.10	6,537	7,958.5	5,540.3	69.6	
Apr-Jun 99	SIX MONTH FIGURES													
Jul-Sep 99	2,577	2,259	317	346	43,145.7	32,288.3	74.8	5.97	5.24	6,752	8,251.9	5,852.7	70.9	
Thai Airways														
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	-121	12,084.0	7,963.0	65.9	4.84	4.82		1,700.0			
Jul-Sep 98	629	584	45	176	12,118.0	8,769.0	72.4	5.19	4.82					
Oct-Dec 98	727	647	80	170	12,599.0	9,195.0	73.0	5.77	5.14					
Jan-Mar 99	675			125										
Apr-Jun 99	651			93										
Jul-Sep 99														
Air France														
Jan-Mar 98	5,126	5,079	47	18										
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	5,088	4,894	194	228	49,724.0	38,070.0	76.6	10.23	9.84					
Oct-Dec 98	SIX MONTH FIGURES													
Jan-Mar 99	5,550	5,552	-2	56	51,394.0	38,242.0	74.4	10.80	10.80					
Apr-Jun 99	SIX MONTH FIGURES													
Jul-Sep 99	5,249	4,889	360	316										
Alitalia														
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	TWELVE MONTHS FIGURES													
Oct-Dec 98	5,152	4,432	720	235	51,638.4	35,427.2	68.8	9.98	6.86	24,103			18,825	
Jan-Mar 99														
Apr-Jun 99														
Jul-Sep 99														
BA														
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
Oct-Dec 98	3,585	3,431	154	-114	44,454.0	29,736.0	66.9	8.06	7.72	10,747	6,277.0	4,111.0	65.5	64,608
Jan-Mar 99	3,343	3,481	-138	-119	43,544.0	29,537.8	67.8	7.68	7.99	10,285	6,130.0	3,933.0	64.2	64,366
Apr-Jun 99	3,527	3,378	149	302	45,813.0	32,032.0	69.9	7.70	7.37	11,733	6,437.0	4,215.0	65.5	65,179
Jul-Sep 99	3,933	3,742	191	49	47,465.0	35,873.0	75.6	8.29	7.88	12,983	6,690.0	4,689.0	70.1	65,607
Iberia														
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	TWELVE MONTH FIGURES													
Oct-Dec 98	4,451	4,100	351	356	45,041.6	32,520.0	72.2	9.88	9.10	21,753		3,740.0		22,065
Jan-Mar 99														
Apr-Jun 99														
Jul-Sep 99														
KLM														
Jan-Mar 98	1,538	1,568	-30	528	17,595.0	13,240.0	75.2	8.74	8.91		2,995.0	2,259.0	75.4	33,227
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
Oct-Dec 98	1,673	1,661	12	-15	18,476.0	13,767.0	74.5	9.05	8.99		3,214.0	2,415.0	75.1	33,761
Jan-Mar 99	1,550	1,670	-120	-45	17,716.0	13,294.0	75.0	8.75	9.43		3,088.0	2,284.0	74.0	33,892
Apr-Jun 99	1,626	1,547	79	37	18,778.0	14,302.0	76.2	8.66	8.24		3,253.0	2,427.0	74.6	34,980
Jul-Sep 99	1,731	1,596	135	32	19,630.0	16,083.0	81.9	8.81	8.13		3352.0	2,640.0	78.8	35,226
Lufthansa* **														
Jan-Mar 98	2,902	2,860	42	223	23,742.0	16,236.0	68.4	12.22	12.05	8,778	4,618.0	3,171.0	68.7	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
Oct-Dec 98	2,929	2,106	823	96	25,530.0	18,259.0	71.5	11.47	8.25	9,819	5,204.0	3,676.0	70.6	55,368
Jan-Mar 99	3,301	3,210	91	64	25,445.0	17,942.0	70.5	12.97	12.62	9,658	4,972.0	3,435.0	69.1	56,420
Apr-Jun 99	3,322	3,012	310	97	30,500.0	22,279.0	73.0	10.89	9.86	11,444	5,626.0	3,993	71.0	53,854
Jul-Sep 99	4,049	3,677	382	184	31,335.0	23,866.0	76.2	12.92	11.73	11,891	5,699.0	4,142.0	72.7	
SAS														
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
Oct-Dec 98	1,368	1,266	102	46*	8,116.0	5,089.0	62.7	16.86	15.60	5,431				27,071
Jan-Mar 99	1,203	1,227	-24	-3*	8,062.0	4,713.0	58.5	14.92	15.22	5,017				27,110
Apr-Jun 99	1,357	1,294	63	60*	8,466.0	5,571.0	65.8	16.03	15.28	5,580				27,706
Jul-Sep 99	1,173	1,150	23	12*	8,450.0	5,667.0	67.1	13.88	13.61	5,589				27,589
Swissair**														
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	6,922				9,756
Jul-Sep 98	SIX MONTH FIGURES													
Oct-Dec 98	2,187	2,070	117	165	20,476.8	15,391.3	75.2	10.68	10.11	5,277				10,396
Jan-Mar 99	SIX MONTH FIGURES													
Apr-Jun 99	1,932	1,877	55	57	23,411.0	16,130.0	68.9	8.25	8.02	7,784				10,715
Jul-Sep 99														

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. 4Q+ data are on IAS basis.

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