Aviation Strategy

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Planning for recession

The only certainties in life are death and taxes; in the aviation industry, the only certainty is that after the longest single upturn in recent history there will be a recession sooner or later. Economists and analysts are capable of arguing until the cows come home on when the next downturn in the industry will occur and how deep it will be, but no-one argues that the traditional cycle has disappeared (the closest to this viewpoint may be Julius Maldutis - see *Aviation Strategy,* April 1998).

In an industry where net margins of just 2% are seen as aspirational, a downturn can be catastrophic - witness the red ink that spread throughout the aviation world in the early 1990s. And in the late 1980s, before the recession hit, everyone knew that a downturn would come - but, with honourable exceptions, very few airlines had detailed strategic plans for what they would do when it did occur. A bit of fuel hedging here, the odd spot of cost-cutting there, was just about the sum total of most airlines' recession planning.

In part this was due to a tendency for airlines to spend time firefighting rather than look at long-term strategic planning, but it was also due simply to poor management. At its extreme the attitude of some airlines was just to let recession occur, and then the carrier would initiate stringent cost-cutting as needed - or, in Europe and Asia, let governments bail them out.

Happily, at many airlines things are different today. The shock of the early-1990s recession along with a significant improvement in the quality of airline managements throughout the world has now resulted in far more sophisticated long-range planning. For example, in October 1998 United Airlines revealed details of what it is already doing in preparation for the next recession. Its four-part plan includes:

• **Route diversification.** The more geographical spread an airline has, the better it will able to ride out a downturn in one or more regions.

• **Capacity switching.** With route diversification in place, United is prepared to switch capacity between regions at a moment's notice (e.g. from Asia to the domestic US market).

• **Cost-cutting.** United, like British Airways, has identified what its core product and assets are. Everything else is, therefore, a candidate for cost-cutting or outsourcing - but *before* a recession hits, not during it.

• **Yield management.** United is introducing measures to keeping high-yield business passengers loyal to the airline.

An important part of United's plans - and a measure that is increasingly being seen at other airlines - is a flexible fleet (also see page 4). United is keeping on 727s and 737s and will ditch them when recession hits (instead of ordering more narrowbodies, which would have to be cancelled or postponed during a slump). Switching a higher proportion of an airline's fleet from outright ownership and finance leases to operating leases also achieves the same flexibility.

Perhaps the greatest lesson that airlines have learnt in the last few years (or are still learning) is that market share means nothing if it results in horrendous financial losses. As well as cutting capacity sharply in downturns, this also means that capacity should not be overexpanded in cycle peaks.

Add to these measures the trend towards global alliances (which will reduce the effect of a slump on an individual airline), and there is a strong argument that many airlines are better prepared than they ever have been for an upcoming recession. Of course some airlines will always be unprepared - and they are the ones that will suffer most from the next recession.

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Playing the alliance end-game

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The make-up of the handful of major alliance groupings that will dominate the industry in the first decade of the next century is now becoming clearer. But the construction of these groupings lies not solely in the hands of the airlines themselves, but will also depend on the decisions of the regulators, in particular the US Department of Justice and the US Department of Transportation.

The summer of 1998 saw what appeared to be the final stage of consolidation in the US airline industry, 21 years after deregulation, with a series of domestic codeshare agreements and so-called virtual mergers proposed between American and US Airways, Northwest and Continental, and United and Delta.

The United/Delta deal appears to have self-destructed because of the demands of the unions at Delta. In any case, most analysts believe that the deal would not have received regulatory approval given that United ranks as the second largest passenger carrier by revenue in the US, and Delta the third. They were also in two separate, competing transatlantic alliances that both enjoy anti-trust immunity. There is more than a hint of suspicion that Delta and United were using a domestic codeshare deal as a bargaining chip to block the other domestic alliances.

The other two transactions remain alive but subject to scrutiny by the regulators. The DoJ is particularly concerned by the clause in the Northwest/Continental agreement that will eventually allow Northwest to take a controlling stake in Continental.

The importance for the rest of the world is that by determining which transactions to approve the US regulators will, in effect, also determine the number of global strategic alliances. The US regulators have historically generally taken a very liberal stance towards airline consolidation, accepting the airline argument that airlines now compete through their networks rather than on an individual route-by-route basis. If, as seems likely, the US Airways and American deal is given the go-ahead, along with a perhaps modified Northwest/Continental deal, then there will be four Mega-majors (see table below).

THE US MEGA-MAJORS

	1997 revenue
American + US Airways	$27.1bn
Northwest + Continental	$17.4bn
United	$17.4bn
Delta	$13.6bn

The final make-up of the US Mega-majors is pivotal in the shape of the global alliance groupings. No global alliance can be formed without a strong US partner and if the US regulators deem that the minimum number of Mega-majors it will permit is four then this will in turn determine the number of global alliance groupings.

Of these alliances, arguably the most advanced in terms of branding is the Star alliance, with United and Lufthansa as its core members. There is also a large amount of glue between oneworld partners British Airways and both American and latterly US Airways, which has now dropped its lawsuit against BA and is exploring ways to co-operate.

The confusion lies with the other two global groupings. KLM and Northwest have a strong partnership, which is probably the most advanced of the alliances in extracting revenue benefits. Alitalia is easily accommodated but Continental adds the complication that it also has a strong relationship with Air France. Whilst it would seem sensible for Continental's management to wish to keep the relationship with Air France intact in case the Northwest deal fails to get regulatory approval, if it is given the go-ahead then surely Continental will join the so-called Wings grouping?

This will leave Delta and Air France, airlines that already have a codeshare relationship, to extend this agreement into a full blown strategic alliance. A neat solution - but one that leaves Swissair uncomfortably positioned. At present Swissair is a member of the Atlantic Excellence grouping, which has not been marketed as aggressively as either Star or even the fledgling oneworld. Rumours persist that Swissair, and potentially its close partners, Austrian, Sabena and TAP, are considering other alliance options - in particular Wings and oneworld. The Swiss more than anyone else await the decisions of the US regulators with interest.

Why should banks want to own operating lease companies?

The purchase by Deutsche Bank of the medium-size US leasing company, Boullioun Services, from Sumitomo Trust, could signal an important trend in aviation finance.

Deutsche Bank will pay about $120m for Boullioun, which has a fleet of 38 737s, an orderbook of a further 60 (30 firm plus 30 options) plus a 36% stake in SALE, a joint venture with SIA. Other European banks with significant aircraft portfolios are looking to complete similar deals, either by buying up other small and medium-sized lessors or the leasing arms of other financial institutions. Some Japanese banks are being forced to unload their leasing operations as part of their overall restructuring efforts - for example, Sanwa is seeking approximately $900m for Business Credit Corporation, its US leasing subsidiary.

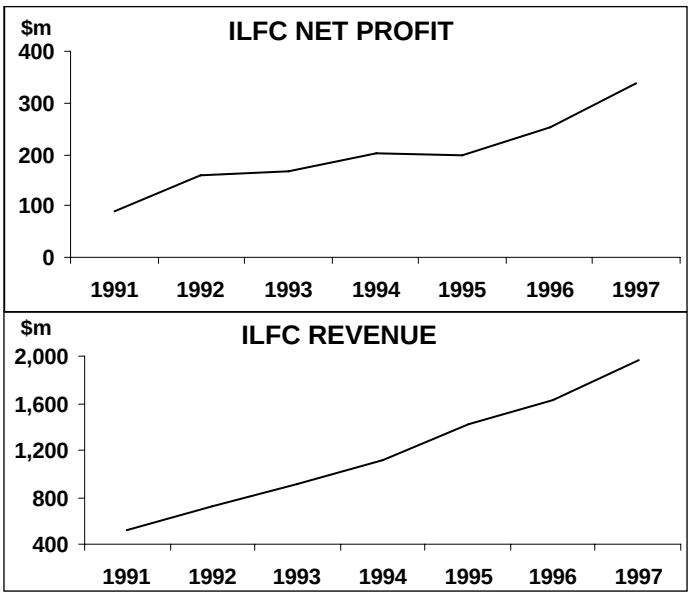
It is interesting to note that the residual GPA has been partly bought out from GECAS, with the US venture capitalist Texas Pacific paying about $115m for a 48% stake. GPA will be renamed AerFi Group and have a portfolio of about 80 A320s and 737s (at its peak in the early 1990s GPA's fleet comprised 220 units with a further 400 on order). Texas Pacific's main partner is David Bonderman, whose shrewd investments in Continental and Ryanair have proved so profitable in the recent past; he evidently now perceives latent value in operating lessors.

How profitable is aircraft financing?

Straight aircraft financing has not been a very profitable business for banks. Risks are minimised through government guarantees and ECA financing, and consequently banks have been achieving very low margins - for instance, 20 to 40 basis points (bips) above Libor on transactions with first-rank or flag-carrier airlines. Even with higher risk airlines the margins seldom exceed 80 bips, such is the competition among banks for airline business. Although many banks have greatly downsized their aircraft financing arms, there is a reluctance to pull out completely, partly because bankers like to display model aircraft on their desks, more seriously because they want to maintain relationships with high-profile clients in the hope of participating in more lucrative financing business (mergers, acquisitions, rights issues, etc).

By contrast, the most successful of the operating lessors appears to be a paragon of profit. ILFC's net profit margin was 17.3% in 1997 but it has also been able to maintain consistent profits throughout the economic cycle - its lowest net profit margin during the 1990s was 13.8% in 1995.

ILFC's continuing success is closely associated with its ownership. In 1991 ILFC's manager-owners astutely sold their company to the giant financial entity American International Group (AIG), which has a AAA credit rating. As a result ILFC has been able to achieve the lowest possible cost of capital, and so maximise the difference between its interest charges on its



owned aircraft and the rentals paid by its lessee airlines. The financial clout of the group also enables ILFC to place bulk aircraft orders and so obtain the lowest possible unit prices from the manufacturers.

Through buying into Boullioun, Deutsche Bank is evidently hoping to replicate part of the ILFC success formula by giving the lessor access to its AA+ credit rating (as well as German tax-based lease structures). The leasing company will bring its expertise in managing assets throughout the cycle - at the most basic level, buying equipment in the downturn, selling close to the peak.

But there is another key reason for entering the operating lease business, which is related to the changing nature of fleet planning. Traditionally, the main customers of the operating lessors have been second-tier airlines, start-up carriers, charter airlines and Developing World airlines, whose balance sheet weakness preclude them from buying outright or entering into finance leases. Now, however, operating leases are being used by the world's leading airlines as an integral part of their fleet strategies.

In deregulated markets predicting traffic volumes becomes more and more problematic, increasing the risk of exposing airlines to overcapacity in a downturn. A key concept for fleet planners is a core fleet supplemented by a flexible fleet than can be expanded or contracted rapidly in response to market conditions; the role of lessors is to supply the flexible fleet.

As the table below shows, the leading lessors now have placed a substantial proportion of their portfolios with major airlines in North America and the US. To penetrate further into this segment an operating lessor has to be able to compete with the leading airlines' own financial clout and their ability to negotiate discounts from the manufacturers.

LESSOR PENETRATION OF FIRST RANK AIRLINES

	Jets leased to North American or European Majors	As % of lessors' total jet fleet
ILFC	112	30%
Boullioun	9	29%
Ansett	25	23%
GECAS/GPA	103	20%

A promising growth prospect for the lessors is - perhaps surprisingly - Asia, where the leading airlines have generally eschewed operating leases. Sale and leaseback of aircraft has already become the main method for raising desperately needed dollar funds.

Networks are being radically revised, and airlines are frantically downsizing or "rightsizing" their fleets to match capacity to the new level of demand. Lessors are seizing the opportunity of switching surplus aircraft from the East to the West where there are still shortages of some narrowbody types.

Questions of timing

While there is a strong commercial logic behind Deutsche Bank's investment, there are doubts about how widely this strategy can be followed by others. It is evident that the aircraft market is now moving into surplus as economies slow, Asian capacity is shifted to the Atlantic and deliveries of aircraft ordered in 1996 and 1997 are starting to accelerate. Widebody values are down 30% from the beginning of 1998 and narrowbodies are starting to come under pressure.

The timing of further purchases would not appear to be optimal, but as always the deals will be done if the price is perceived to be right. In assessing the premium a bank might be willing to pay over the lessor's net asset value, it should be asking these types of questions:

• What is the quality of the leasing company's management? How wide and deep are their airline contacts? How quickly and effectively do they react to a lessee slipping into financial difficulties?

• Does the composition of the fleet match up with future demand requirements? Are maintenance conditions rigorously monitored? How much flexibility is there in the delivery pattern of new aircraft?

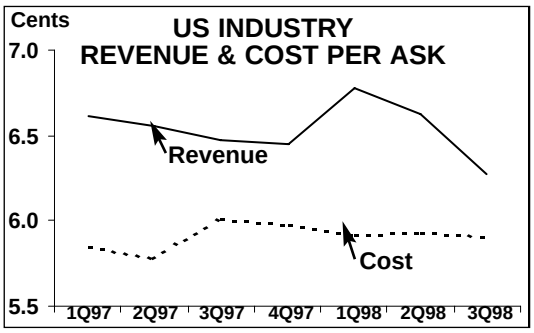
• What is the nature of the lessee airlines? What is the likely default rate? Or even, are there too many first-rate airlines with strong lease negotiating powers in the portfolio?

US industry over the peak, but still records strong results

The US industry has passed its peak, following third-quarter 1998 results that were down on the same quarter of 1997. The nine main airlines recorded a combined operating profit of $2,283m and net profit of $1,323m in July-September 1998, compared with a $2,548m operating profit and $1,860m net profit in 3Q 1997.

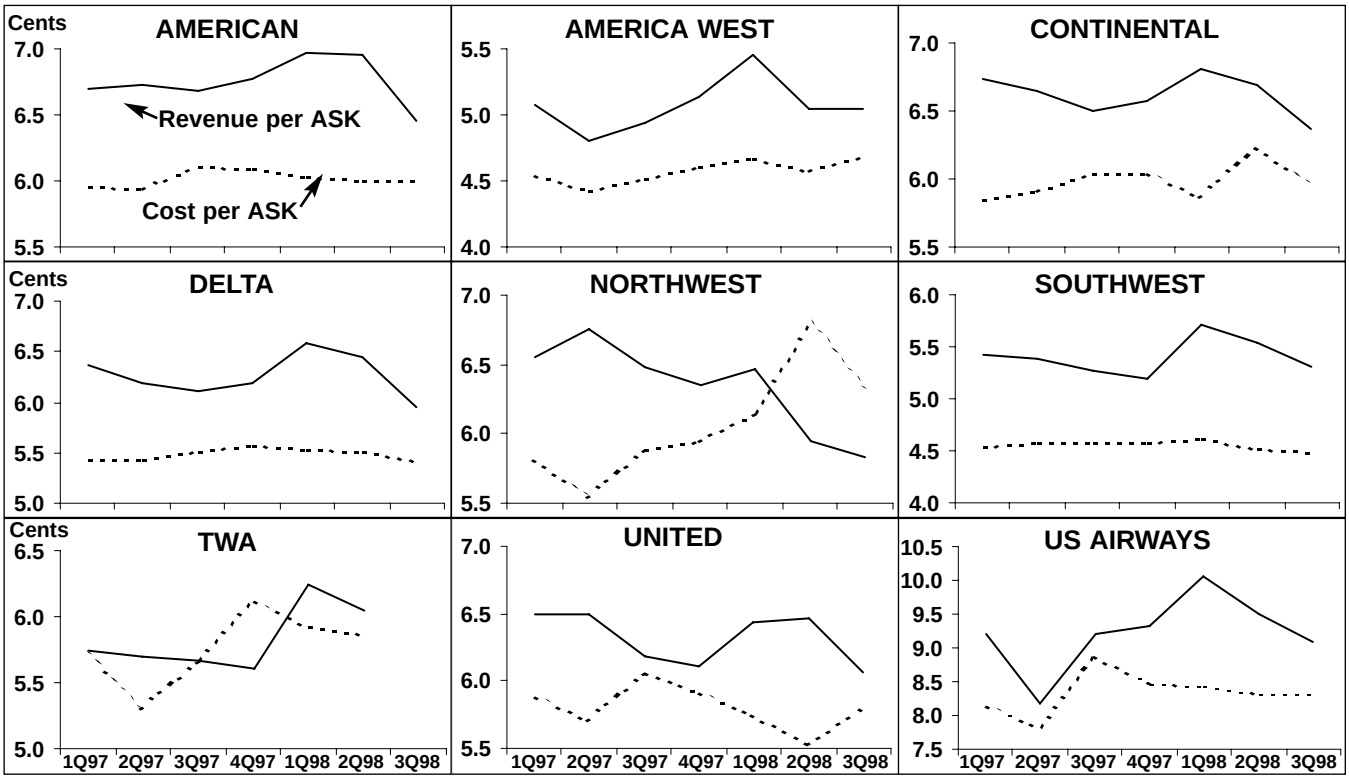
In July-September 1998 the gap between unit revenue and unit cost (compared with the previous quarter) narrowed at all the Majors except American and United. The worst results came from **Northwest,** which plunged back into the red with a $276m operating loss and a $224m net loss following the 18-day pilots strike. Northwest estimates the dispute knocked at least $630m off operating profits for the period, and management is warning that the "lengthy recovery" from the strike will also result in a loss for the fourth quarter and 1998 as a whole.

Yet Northwest's performance and the passing of the cycle peak must be seen in perspective, as



third quarter results were excellent at most of the other Majors - in many cases surpassing the estimates of US analysts. This was primarily due to strong domestic demand, lower fuel prices and the disputes at Northwest and - to a lesser extent - at Air Canada, which took a sizeable chunk of capacity out of the market.

America West, for example, reported record third quarter net profits as its recovery plan started to take shape. A five-year deal was signed with



maintenance staff and a $1bn finance deal was arranged for A319s.

Continental posted record third-quarter operating profits. Highlights of its quarter were ratification of a labour deal with the dispatchers' union and the announcement of a tentative agreement with the mechanics union. The airline also beefed up services out of its Newark hub and announced new services to Zurich and Brussels.

At **Delta** there were also record third quarter net income figures. This was primarily driven by an 8% rise in domestic unit revenue, which more than compensated for an 8% decline in international unit revenue.

Southwest's third-quarter net profits were 40% up on the same three months in 1997, helped by unit costs that fell 1.4% primarily due to lower fuel prices. The airline's cash pile now stands at $452m and it also has unused bank credit of $425m.

TWA bounced back from an operating loss in the second quarter of 1998 with a $24m operating profit in the third quarter. However, there was still a net loss in the period of $5m, which was "simply not acceptable" according to Gerald Gitner, chairman and CEO. In particular lower fuel prices were cancelled out by higher aircraft rental costs, and the airline also cited the fact that high fares put off some passengers.

US Airways also posted record third-quarter net income, boosted by high load factors. The airline also repaid $324m of long-term debt in the quarter.

The stars, however, of the third quarter were again **United** (see page 10) and **American.** Between them they recorded operating profits of $1.3bn, boosted by strong domestic performances that overshadowed international sector weaknesses.

Overall industry ASKs for the quarter fell by 0.6% compared with the third quarter of 1997, but with RPKs rising by 0.9% industry load factor rose 1.1 points to 74.8%.

The gap between overall industry unit revenue and cost closed to 0.69 cents per ASK, compared with a 0.77 cent gap in the third quarter of 1997 and a record 0.86 cent gap in the second quarter of 1998.

Pawns in the Asian alliance game

Against all the odds Philippine Airlines is still alive (see *Aviation Strategy,* October 1998), reprieved by a union agreement for a 10-year wage freeze and strike moratorium in return for three board seats and a 20% ESOP. Although the airline remains in an extremely delicate state, various airlines are interested in investing because PAL has developed into a strategically-positioned pawn in the global alliance game.

Cathay, SIA and Northwest are the candidates for a stake of up to 40% in PAL, while Lufthansa has also expressed interest. The influence of these potential investors is strong: in mid-October they dissuaded PAL from fully restarting its international network until they had had a chance to examine the economics of the domestic operations, which resumed on October 7th after a 13 day shut-down.

Cathay is, by some way, the frontrunner and appears willing to take on challenges of running PAL and, in particular, the unions. It should be noted that 35% of the ground staff union, PALEA, voted against the final rescue package, still under the delusion that the government would renationalise the carrier. Opposition to the new deal was most forceful at Manila airport where 42% voted no. As part of its turnaround plan many of the Manila-based staff in maintenance, catering and ground handling will be spun off into associated companies, so eventually PAL will have a sizeable majority of staff who are agreeable to the ESOP package. But there is very likely to be more labour problems over the next three to six months.

Politically, Cathay would appear to be very well placed to conclude a deal with Lucio Tan, chairman and majority owner of the airline, and President Estrada of the Philippines. During the strike Cathay leased five aircraft to a subsidiary company of the

Philippine National Bank (which with other government entities owns 20% of PAL) and provided full crew and all ground support at cost.

So Cathay is owed a big favour by the Philippine government. At the very least the Philippine Civil Aviation Board will not attempt to redress the major capacity imbalance on Manila-Hong Kong. More likely the government will actively support Cathay's bid for PAL, and as President Estrada is at beginning of a six-year term, that support will not suddenly disappear with a change in government.

Cathay can also exploit its Chinese connections in its dealings with Lucio Tan, who is originally from the Xiamen region in the mainland, where Cathay's maintenance joint-venture is based. In addition, David Turnbull, Cathay's CEO, spent two years as country manager in the Philippines.

Cathay: co-equal or junior brand?

Cathay has stated that it will only invest if there is significant debt restructuring and if it is assured of management control. But why should Cathay, traditionally very cautious about alliances and investments, be considering getting involved with a perpetually loss-making airline with serious labour difficulties in a regulatory environment where domestic fares are artificially repressed?

Part of the answer may lie in Cathay's need to define its role in the oneworld alliance.

Cathay joined oneworld in a poor condition, with its share price reflecting the discounted value of its fleet instead of its position as the premier Chinese airline (see Briefing, *Aviation Strategy* September 1998). Cathay is evidently oneworld's key partner in Asia, but can it expect to be regarded as the co-equal of American and BA in the alliance? The other two oneworld airlines - Canadian and Qantas - are in reality junior brands, each partly owned by the two major partners.

Dragonair could be considered as Cathay's junior brand in the alliance, but Cathay would gain much more power by tying in those southeast Asian carriers that are not in Star and/or Singapore Airlines' growing sphere of influence.

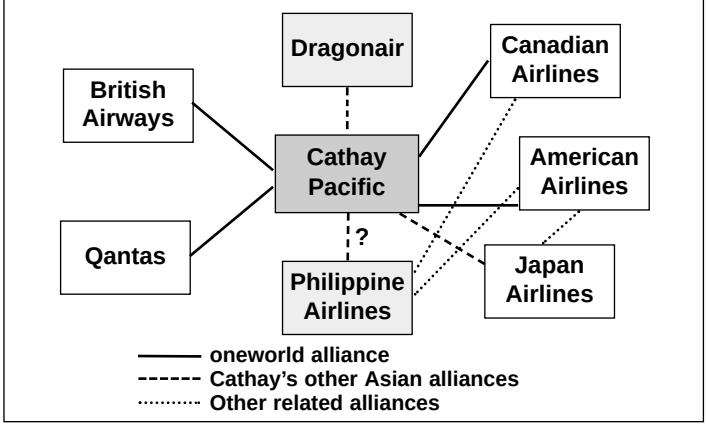
By controlling PAL Cathay should enhance its importance in oneworld. PAL already has a codeshare with Canadian and American is likely to sign another agreement soon - the Canadian operation could be rationalised into joint service over Chep Lak Kok. Qantas, having dropped its own services to western Japan, Taiwan and Korea, could block space on Cathay and/or PAL services to these points. Cathay/BA/Qantas can now set up the fastest one-stop service between Australia and Europe over Chep Lak Kok, and a similar Cathay/BA/PAL service could be added, with Cathay operating PAL's former European routes.

Singapore: the Asian mega-carrier

SIA has underlined the importance of its role in a global alliance by, so far, staying outside Star but signing direct agreements with Lufthansa, SAS and, imminently, United while tying in Ansett and Air New Zealand into its own grouping.

It is in the process of purchasing about 25% of China Airlines, which will probably result in the Taipei-based carrier shifting its transpacific codesharing partner from American to United. The longer-term value of China Airlines to SIA and Star would be greatly enhanced if direct flights between Taiwan and the PRC were to be allowed;

CATHAY PACIFIC'S ALLIANCE POSITIONING



there are some signs from the liberalisation of the shipping agreement between the two countries that some form of direct flights may be possible in the not too distant future.

Then, if SIA were also to gain control of PAL, it would consolidate its position as the dominant carrier in the Indonesian/Philippine archipelago. However, this could cause some social and political problems - the airline of a city state of 3.4m people would dominate two neighbouring countries with a joint population of 286m.

SIA's alliance links are probably not quite as synergistic with PAL as those that could be achieved through oneworld. SIA plus Lufthansa could take over PAL's European services, and Australia could be rationalised through Ansett and Air New Zealand. But, whereas PAL has existing codeshares with American and Canadian, United no longer serves the Philippines, having dropped Manila in March.

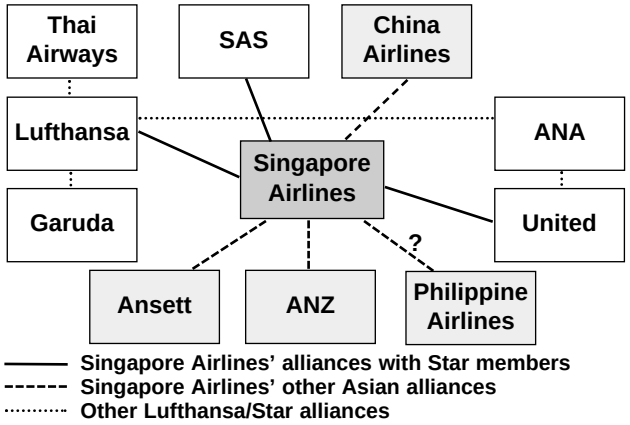
Lufthansa itself has been in talks with PAL since mid-1997, but these talks have concentrated on maintenance and ground handling. Also, Singapore Technologies is very interested in building up a low-cost maintenance base in the Philippines. But HAECO, Cathay's maintenance subsidiary, has very similar plans.

If PAL ends up in the Cathay/oneworld camp, what happens to Garuda? Lufthansa is heavily involved in the carrier's turnaround plan and financial restructuring through its subsidiary, Lufthansa Consulting. Assuming that the Indonesian flag-carrier can be rescued, the Lufthansa connection should prove very useful for Garuda as it is an indirect way into the Changi hub and SIA's support base.

Garuda may be obliged to drop its European operations, leaving Lufthansa and SIA to fly these routes. Similarly, the logical way of rationalising services to the US and East Asian points that do not warrant daily service from Jakarta or Bali would be for Garuda to codeshare on SIA flights over Changi. Garuda could maintain flights over Bali to Australia and Japan.

Garuda would in effect become a regional carrier, with no long-haul routes to Europe or North America, while PAL's future would be similar, with long-haul routes limited to expatriate traffic to/from the US West coast and the Middle East. Asiana will probably also follow the same model, becoming a northeast Asian regional within the context of one of the global alliances.

SINGAPORE AIRLINES' ALLIANCE POSITIONING



Wings in Asia

With Cathay and Singapore striving to maximise their control of the Asian market, both for themselves and for their respective alliances, the Wings alliance looks as if it is being left out in the cold. In effect, Northwest is the key 'Asian' airline in this alliance. Cathay's codeshare agreement with Philippine Airlines and Singapore's link-up with ANA will put pressure on Northwest at its Tokyo hub, while KLM appears to be losing its historical influence in Garuda to Lufthansa/Singapore. MAS, KLM's main Asian codeshare partner, is sinking further into financial chaos.

In these circumstances Northwest may make a final strong bid to wrest PAL away from Cathay. Talks have been taking place between Lucio Tan and Gary Wilson, chairman of Northwest for some time, and the two apparently get on very well. Northwest and KLM could offer good synergies with PAL to the US and Europe, though not to Australia. The other outside chance is that KLM/Northwest will participate in Thai's proposed part-privatisation and extricate that carrier from Star - but BA and American probably have the same idea.

United and the spirit of employee-ownership

Since its July 1994 ESOP, United Airlines has become one of the most profitable US carriers, but is clearly struggling in its efforts to improve on-time performance and balance the need to reward employees and remain competitive. Who will take on the nation's toughest airline CEO job when Gerry Greenwald retires next year? The company has managed the Asian crisis well but now faces uncertainties in Latin America. And what are the prospects for the Star alliance and the link-up with Delta?

United ensured a place in the history books when in July 1994 it became the largest company in the US to be majority-owned by employees. The ESOP deal gave workers an initial 55% equity stake, no-furlough and other protections, two board seats and veto powers over major decisions, in exchange for $5.2bn worth of concessions over 12 years.

The unions also got the right to choose chairman/CEO Stephen Wolf's replacement, and they picked former Chrysler vice-chairman Gerry Greenwald. And, significantly, they agreed to the setting up of a low-cost airline subsidiary, Shuttle by United, which was launched in October 1994 in major West coast markets as a first-ever direct challenge to Southwest.

The deal was among the first employee buy-outs for a relatively healthy company. Although United's parent UAL Corp had lost $332m in 1991 and $957m in 1992, this was nothing compared to competitors' troubles, and UAL's net loss had already narrowed to $50m in 1993. But the management was concerned about losses on short domestic routes and had already deferred aircraft deliveries and announced plans for lay-offs and asset sales.

Not surprisingly, the ESOP deal was met with more scepticism than enthusiasm on Wall Street. There were doubts about the Shuttle's ability to achieve a competitive cost structure and concerns about the extent of opposition to the deal among workers, the relative inexperience of the new leadership, the powers wielded by unions, potential conflicts of interest in corporate governance, the numerous restrictions that reduced management flexibility and the highly detrimental impact of the deal on the company's balance sheet. Four years on, is United better or worse off for the experience?

The Shuttle never got its costs anywhere near Southwest's levels and ended up retreating from many competitive markets in 1996. Its fleet size is barely half of the 130 aircraft it was envisaged to operate after five years. However, it is profitable, has helped United retain a strong presence in California and has proved valuable in feeding high-yield traffic to United's long-haul services from San Francisco and Los Angeles. It also spawned an important industry innovation - e-ticketing - which United has since also pioneered in international markets.

Despite the early-1995 move to the expensive Denver (DIA) airport, United has kept its unit costs below the 9-cent mark. Its costs per ASM, excluding ESOP charges, of 8.94 cents in 1997 were below American's and Continental's and only slightly higher than Delta's. At the same time, United has consistently outperformed the industry on yield improvement: from 11.31 cents per RPM in 1994 to 12.55 cents in 1997 (see chart, page 12).

UNITED FLEET PLANS

	Current fleet	Orders (options)	Delivery/retirement schedule/notes
727-200	77	0	75 being hushkitted
737-200	56	0	
737-300	101	0	
737-500	57	0	
747-100	6	0	To be replaced by 747-400s
747-200B	9	0	To be replaced by 747-400s
747-400	32	19	For delivery by 2001
747-SP	3	0	
757-200	86	2	1 in 1999, 1 in 1999
757-200EM	10	0	
767-200	11	0	
767-200EM	8	0	
767-300EREM	24	13	For delivery by 1999
777-200	16	0	
777-200ER	18	18 (34)	7 in 1999, 11 in 1999
DC-10-10	23	0	
DC-10-30	8	0	
A319	10	28	For delivery by 2000
A320	46	27 (50)	For delivery by 2000
TOTAL	**601**	**107 (84)**	

The initial fears that an employee-owned United would go on a hiring and aircraft ordering binge proved unfounded, though the company has grown faster than the industry average. Over the past three years, ASMs have increased by 3-4% annually - more than matched by traffic growth. After an initial 6.6% cut in 1994, staff numbers rose from 76,100 to 91,700 in the three years to the end of 1997. In the same period, fleet size increased from 543 to 575 aircraft.

Labour cost savings and the Shuttle must have contributed to UAL's financial turnaround and return to strong profitability. A marginal net profit of $51m in 1994 was followed by a $662m net profit in 1995, $960m in 1996 and $1,546m in 1997. Last year's net profit margin of 8.9% was the highest among the major carriers (even beating Southwest's 8.3%).

The recapitalisation associated with the ESOP deal significantly weakened the company's balance sheet. Because of its fleet renewal programme, United has spent less than many of its competitors on retiring debt early, and consequently its long term debt and capital lease obligations were a substantial $4.26bn at the end of last year. This was about the same as in 1994, and debt has remained largely constant this year.

But the balance sheet has improved thanks to strong cash flow and equity boosts. Shareholders' equity more than doubled last year from $1bn to $2.3bn. United has also gained investment-grade credit ratings, but heavy capital spending has meant that its ratings are not as strong as American's or Southwest's.

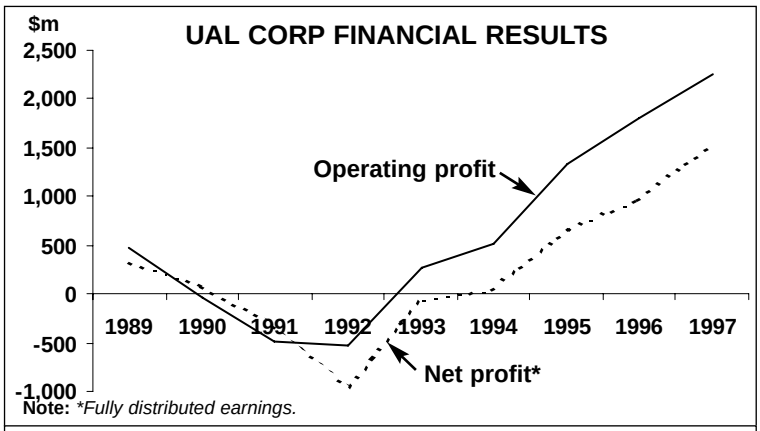
United has been repurchasing its stock for several years, but a formal programme was put in place only a year ago. Some 2.88m shares were bought back at a total cost of $250m in the fourth quarter of 1997 (when UAL also recorded $275m proceeds from the sale of Apollo Travel Services and a $103m gain on the sale of a subsidiary's stock). A new stock repurchase programme of up to $500m was authorised in September 1998. The company has also started talking about paying dividends.

The sharp economic downturn in Asia - where United earns 20% of its revenues - in the early months of this year caught the carrier rather unprepared, but lower fuel prices, reduced capital spending and a quick reallocation of capacity in Asia rescued the situation. For the first quarter, UAL reported another record $218m net profit (up 1.4%), and in the June quarter its net earnings rose by 11% to a record $418m.

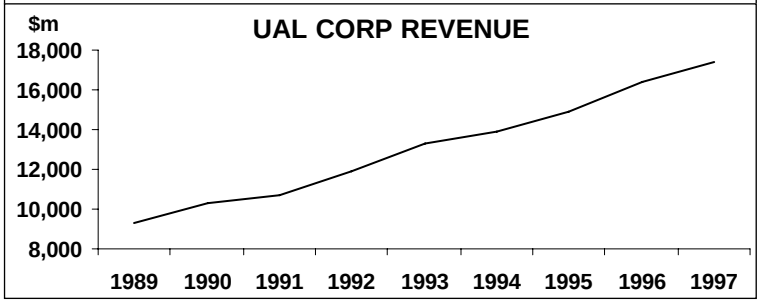
The company has just reported a $516m net profit (on a "fully-distributed" basis) for the quarter ended September 30, down from the year-earlier $734m or, if last year's $235m after-tax gains are excluded, up from $499m. The third quarter was characterised by strong domestic demand (boosted by the Northwest strike), which more than offset weak unit revenues on the Pacific and increased industry capacity in the Latin American and transatlantic markets. UAL looks set to break earnings records for 1998. The current First Call consensus estimate is a net profit of $10.73 per share, up from $9.97 in 1997.

But UAL's earnings, like those of most other major US carriers, are now expected to fall in 1999 - the current First Call estimate is $10.20 per share. The high level of debt and the long-term job security provisions in the ESOP do not make United ideally prepared for an economic downturn, but the company believes that its flexible fleet plan and measures like a hiring freeze will enable it to stay profitable.

The ESOP deal has not lived up to expectations in terms of improving morale or leading to more cohesive labour-management relations. Flight attendants never joined the ESOP, and simmering resentment among other employee



Note: **Fully distributed earnings.*



groups about the terms of the agreement has led to further unionisation. However, worker involvement has improved and, despite disagreements, United has not had any work stoppages or disruptions.

Nor has the 'spirit' of employee-ownership improved the carrier's lack-lustre passenger service. United has persistently ranked near the bottom in the DoT's on-time performance and other customer service comparisons.

But the power wielded by unions at United was amply illustrated by the mid-September resignation of UAL's president and COO, John Edwardson. He stepped down when it became clear that the heads of IAM and ALPA would not support him to succeed Greenwald as chairman and CEO, even though he had the general support of the board. Greenwald is expected to retire when his five-year contract expires in July next year.

Edwardson was instrumental in mending UAL's balance sheet and managing the return to strong profitability. But the unions did not like his "bottom-line mentality". UAL quickly named James Goodwin, its senior VP-North America, as Edwardson's replacement, but he will not necessarily be the next CEO. There are no obvious candidates for the top post, which is likely to be a very hard sell.

Labour challenges

The biggest challenge facing the next CEO will be to secure new contracts with IAM and ALPA when their current agreements expire in 2000. The big question is: will the ESOP be extended?

Negotiations for the first interim wage adjustments for the pilots, mechanics and machinists last year suggested that the circumstances have changed. The deals had to be considerably sweetened over what had been envisaged in 1994. Contrary to the earlier ESOP provisions, the company also agreed to restore wage rates to the 1994 pre-concession levels in 2000.

In October 1997 United's 22,000 flight attendants, who had earlier turned down a tentative agreement and threatened to strike, finally ratified a 10-year contract that guaranteed three 2% pay rises over five years and seven lump sum payments of 3-5% of annual wages over ten years. Further negotiations in 2001 could lead to additional increases in wages, per diem expenses and retirement benefits.

There is now a new employee group to negotiate with: the 19,000 passenger service and reservations agents who in July voted to be represented by IAM. This came about because of widespread resentment among non-union workers about the terms of their ESOP deal, in particular the new two-tier pay scale that penalises new workers.

The mid-term wage adjustments led to a substantial hike in United's labour costs in 1997 and this year, though that has been masked by the decline in fuel prices. The AFA contract will cost at least an additional $1.2bn over ten years. But the plan is to try to offset the higher labour costs through savings from fleet streamlining, new technology and efficiency improvements.

The recent sharp decline in airline share prices will not have enhanced the popularity of the ESOP, though UAL's shares are still trading at almost three times their value than when the ESOP went into effect. The next ESOP will no doubt incorporate changes, such as allowing non-union employees to vote on the deal.

Quality and reliability issues

United has always been stronger on the network than product side, but the post-ESOP strategy has been to try to improve the latter through new recruitment in customer service, product upgrades and better training. The company is now also demanding higher standards from its commuter partners, which led to the termination of Mesa's United Express contracts at Los Angeles and Denver.

The flagging on-time performance is now being tackled with "Start the Airline Right" (STAR) programme, which copies US Airways' successful efforts to focus on the first flights each morning, and various process changes recommended by employee task forces. United has blamed the delays partly on its complex hub-and-spoke system and the multitude of aircraft types used, and it is also exploring schedule changes and hub redesign.

Fleet plans

United's post-1995 fleet strategy has focused on retiring older aircraft and replacing them with newer, more cost-efficient models. The long-term

aim is to simplify the fleet from 10 to five types. Since the early part of this year, the strategy has also been to grow in order to take advantage of profitable opportunities. The latest plan reflects 3% annual growth in capacity and calls for the net addition of 68 aircraft over four years, from 571 at end of 1997 to 639 at the end of 2001.

United introduced the 777 in 1995 as that type's launch customer. Initial reliability problems with the 777 led to a decision to order another batch of 747-400s the following year. A $3.5bn order for 27 Boeing widebodies (mostly 747-400s) in August 1996, for delivery in 1997-2001, marked the start of the process to replace 17 747-100s, which had an average age of 24 years, and nine 747-200s. A $3bn order for 23 Boeing aircraft in April 1998 marked the start of the widebody fleet growth phase. Significantly, the bulk of the order (16) was for the 777-200, which will total 52 when all the aircraft have been delivered.

United has continued to build up its narrowbody Airbus fleet since introducing its first A320 in late 1993. This year's two A319/A320 orders, for a total of 52 aircraft, marked the start of the narrowbody growth phase. The carrier is also hushkitting 75 older 727s, which it can retire in the event of an economic downturn.

Domestic strategy

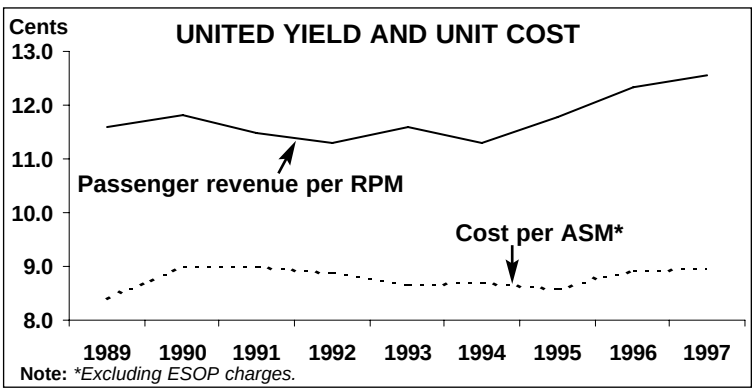
The Shuttle has succeeded in protecting United's West coast markets because it offers low fares, full-service amenities and mainline FFP participation. It has given United a strong 30% market share at Los Angeles, compared with American's and Delta's 12% each, when only a few years ago the three had roughly equal shares. The "newest hub" has been strengthened with new long haul services and a $200m project is under way to renovate terminals and expand the Shuttle's facilities by 40%.

United took the Shuttle to its Denver hub in early 1997, where it proved an effective weapon against low-cost new entrants like Frontier and WestPac (the latter filed for bankruptcy and ceased operations in February for unrelated reasons). The Shuttle's network now includes nine cities in California and 12 in seven other Western states. Last year it accounted for 11% of United's total flying hours and 16% of passengers.

The past year has seen extensive restructuring of feeder operations in the West. A new high-quality partner, SkyWest, has succeeded Mesa and Westair as the United Express operator along the West coast, and feeder services there have been substantially expanded. Mesa's Denver operations were awarded to existing partners Air Wisconsin and Great Lakes Aviation.

United has continued to expand its substantial transcontinental network with the help of new A319/A320s, which have the coast-to-coast range and the smaller size (the A319) to make new or thinner markets viable. They have been used to launch new services such as Washington Dulles to Portland and San Jose, Baltimore to Los Angeles and San Francisco, Boston to San Jose and San Diego, Hartford to San Francisco and Tampa to Los Angeles.

While domestic codesharing plans with Delta are in limbo, United has just greatly expanded codesharing with Air Canada to cover more than 600 United flights throughout its domestic system.



Note: **Excluding ESOP charges.*

Asian troubles, European strength

Sharp intra-Asian service cuts in February, followed by the suspension of San Francisco-Seoul and Osaka-Seoul services in May, enabled United to limit the financial damage of the Asian crisis. A 13% Pacific traffic decline and lower yields reduced UAL's pre-tax earnings by about $75m in the first quarter, but the Asia division broke even in the second quarter as a 12% capacity cut enabled load factors to be maintained.

United has managed the crisis fairly effectively by continuously reshuffling capacity within Asia to suit demand conditions. It has introduced a new Chicago-Hong Kong service, resumed

Osaka-Seoul flights and restored Tokyo-Seoul frequencies. But it will now eliminate Honolulu-Osaka flights due to very low yields and heavy losses and transfer the aircraft to the San Francisco-Honolulu route. In December it will drop its daily Hong Kong-Singapore service and redeploy the capacity in the Hong Kong-Bangkok market.

The new US-Japan ASA has enabled United to substantially boost its services to Japan. Since April it has more than doubled its flights from Chicago to Tokyo, introduced a daily Chicago-Osaka summer service and re-entered the international market at Seattle with a new daily non-stop service to Tokyo. But the combined effect of the flood of new capacity on US-Japan routes and Japan's worsening economic recession has been to keep yields under pressure. United's smartest move in Asia, therefore, must be the marketing alliance forged with ANA.

The transatlantic market, which last year accounted for 10% of United's revenues, has continued to perform well. This year has seen the addition of Munich and new frequencies to London Heathrow and Paris. In the event of a US-UK open skies ASA, United would commence service to Heathrow from Boston, Denver, Miami and Seattle and increase flights to Heathrow from Newark, Washington DC, JFK, Los Angeles, Chicago and San Francisco.

Latin American uncertainty

Because of the smaller Majors' aggressive expansion, United has lost its second position on US-Latin America routes to Continental and will soon be overtaken also by Delta. Its share of US carriers' traffic on Latin America routes is now just 8%, compared with American's 56%, Continental's 19% and Delta's 7%.

However, after a marginal decline in 1997, this year United has again been expanding to the region. Its Latin America capacity in September was 16.4% higher than a year earlier. While Miami continues to be the main gateway, much of the latest expansion has taken place from Chicago. United's main hub has received new daily services to Sao Paulo, Guatemala City and Buenos Aires, while the Washington/Dulles hub has been linked with San Salvador.

The problem is that the significant overall Latin American capacity increase by US carriers this year has led to extremely low load factors on many routes. United ended the new Guatemala service after only five months and is now temporarily suspending its Lima-Santiago service for three months. Given that the economic prospects for Latin America now look uncertain, like other carriers United is waiting to see how the situation develops.

Codeshare alliances come particularly handy at times like this. After almost being left out of the Latin American alliances game, United secured the most prestigious of all partners, Varig, when the Brazilian carrier joined the Star alliance in October 1997. United has also continued to build on its successful commercial relationship with Mexicana.

Prospects for the Star alliance

Much of United's international effort now focuses on the Star alliance. United estimates that Star and its other international alliances already give it $200m incremental revenues annually.

In addition to forging the Asian links, expanding codesharing and introducing a joint FFP, over the past year the Star partners have focused on garnering cost efficiencies from the sharing of airport facilities, joint purchasing and managing of parts inventories and co-operation in cargo operations.

United is extremely disappointed that the proposals for Star and other alliances have been affected and delayed by the extensive BA/AA debate. It vehemently opposes the EC's proposed conditions on Lufthansa/SAS/United, particularly since the EU countries concerned already have open skies ASAs with the US (the DoT is due to take action on United's complaint against the EC by November 5).

While Delta and United began to link their FFPs on September 1, further discussions on domestic codesharing were terminated after Delta's board turned down its pilots' request for a board seat - something that had been a precondition to pilot approval for the alliance. Motivation for domestic codesharing has diminished also because of the difficulties and delays experienced by Northwest and Continental. But should the two carriers that started it all go ahead with codesharing, United and Delta could probably quite easily revive their talks.

By Heini Nuutinen

British Airways - coherent strategy, tactical frustrations

More than any other European airline stock, British Airways has been hit by an apparent collapse in investor confidence. As at the end of October its share price was down about 45% (relative to the FT all-share index) compared with 12 months ago. Has something gone fundamentally wrong with BA's strategy, or is the stockmarket overreacting to tactical setbacks?

Although BA's first quarter results covering the three months up to June 30th 1998 showed a headline pre-tax profit figure of £145m ($237m), which was in line with analysts' forecasts, the make-up of the headline number was not as expected. Of particular concern was the 4.3% decline in passenger yields, caused by a combination of the strength of sterling and, more worryingly, a slowdown in the growth of premium traffic.

This has meant that further emphasis is being placed on BA's ability to deliver on its business efficiency programme. While pre-tax profits have, since 1995/96, ranged between £580m-£642m ($950m-$1,052m) - and are forecast by Goldman Sachs to be £616m ($1,009m) - in 1998/99, these figures have been achieved against annual cost savings of £250m ($410m). Thus BA will have generated £1bn in savings by the year 2000 - but at no likely improvement to the bottom line. There is a growing concern amongst investors as to what effect these continued cost savings will have both on customer service levels and staff morale.

BRITISH AIRWAYS FLEET PLANS

	Current fleet	Orders (options)	Delivery/retirement schedule/notes
737-200	23	0	To be replaced by A320 family
737-300	7	0	To be replaced by A320 family
737-400	34	0	To be replaced by A320 family
747-100	14	0	To be replaced by 777s
747-200	16	0	To be replaced by 777s
747-400	48	9	5 in 1999, 4 in 2000
757-200	50	0	
767-300EREM	28	0	
777-200/200ER	19	20 (16)	For delivery in 2000-2002
DC-10-30	7	0	
A319	0	39	Delivery in 1999-2004
A320	10	20 (129)	Delivery in 1999-2004. Options are for A320 family
Concorde	7	0	
TOTAL	**263**	**88 (145)**	

Strategically, BA was probably correct in attacking labour costs in 1997 when the market was strong and there was no hint of recession (and well before its competitors). Tactically though, the cabin unions were clumsily handled, the strike was acrimonious and labour relations are still at a fairly low ebb.

Pilots in particular are rumoured to be spoiling for a fight, concerned over continued outsourcing through franchisees and BA's so-called virtual airline arm Airline Management (AML). AML was set up by BA with Gatwick-based Flying Colours to operate low-yield, long-haul scheduled services from Gatwick, primarily to the Caribbean.

The limits of BA's outsourcing policy may now be being reached. Easy spin-offs like catering and engine maintenance have been sold. Airframe overhaul is now under pressure from management to meet more exacting targets in terms of productivity, on-time performance and greater reliability. Failure to achieve these targets may result in BA looking at outsourcing options, but the risk is more friction with the unions and potential disruption to its operations.

Fleet planning

After six months of speculation, BA finally opted in August for up to 188 A320/319s, although only 59 of them are firm orders, rejecting 737NGs from its traditional supplier Boeing and buying from Airbus for the first time. While political considerations may have played a peripheral role (with BA wanting to present itself to the Commission as pro-European as possible), achieving the lowest possible procurement costs was, as always, the highest priority.

BA asked the banks to liaise with the manufacturers and to come up with a form of funding for the order which would provide BA with maximum flexibility and be structured in such a way that BA would not have to show the aircraft on its own balance sheet. It was looking not just for an operating lease, but also for a 'power-by-the-hour' arrangement. Disappointingly for BA, no effective proposal was made and the airline reverted to standard financing techniques. However, this was a strong indication that BA continues to think deeply about purchasing

capacity from third-party suppliers despite its ability to negotiate unit prices that (although unrevealed) were undoubtedly very low - in other words, the virtual airline concept.

At the same time, BA ordered up to 32 777-200s and further emphasised its commitment to downsized widebodies by cancelling an order for five 747-400s.

The key idea behind downsizing is that operating costs per seat will be about 20% lower on a 777 than on a 747-100/200, while average yield will be boosted because BA will maintain the same first/business class configuration in the smaller jet as in the 747 - in effect discarding economy seats. Over the next 10 years Boeings should be the only type in BA's long-haul fleet, though BA still manages to keep the pressure on by reiterating its interest in the super-jumbo and in particular the A3XX.

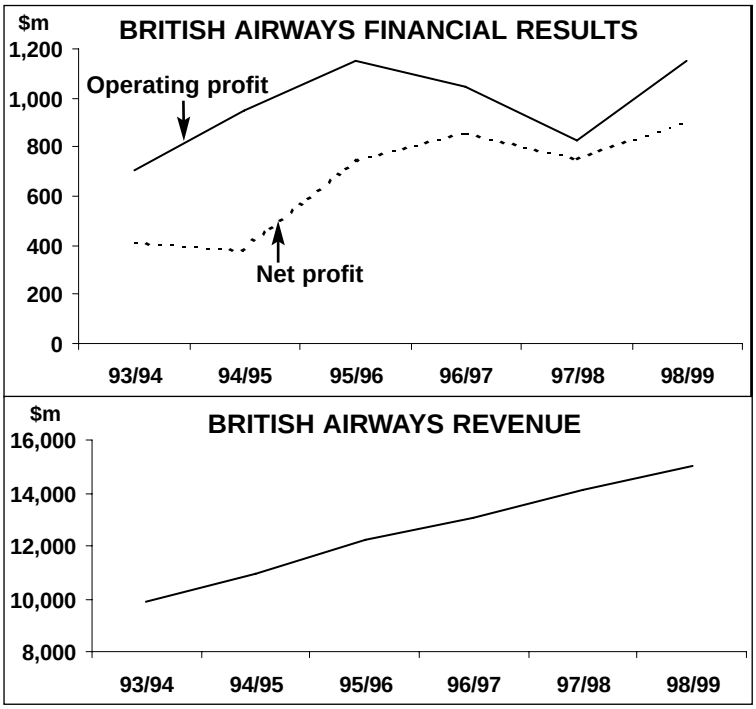
In the near future the only BA aircraft operating out of Heathrow will be Boeings. The plan is to maximise the value of its slots by not operating aircraft smaller than the 757 from that airport. The A320 family will be deployed from Gatwick, Birmingham and Manchester and by BA's European subsidiaries in France and Germany. However, the fleet plans of Go at Stansted are still based on 737s, with another eight to be delivered over the next 18 months from GECAS in order to expand the existing five-strong fleet.

BA/AA unconsumated

BA's failure to consummate its alliance with American - "an alliance made in heaven", according to Bob Ayling - has been reported endlessly over the past three years. BA gives the impression that it feels that it has been unfairly singled out by the EC - subjected to scrutiny that KLM or Lufthansa avoided - and that the EC has failed to address wider competition issues (such as Lufthansa's control of 95% of the intra-German market at Frankfurt). "Too much regulation, not enough vision", as Bob Ayling puts it.

Yet the tedious EC process has not been helped by BA's less than cordial relations with Karel van Miert, the competition commissioner. First of all, BA misread the EC's powers to intervene in a UK-US alliance, then it managed to offend the commissioner - who is very protective of his staff - by describing his department's research as "shoddy".

In recent weeks BA seems to have moved to the position of going ahead with the American



alliance without anti-trust immunity, which is how the other transatlantic alliances started. In the current economic climate, with downturns or even recessions looming on both sides of the Atlantic, this may make a lot of sense. In the short-term BA would not be obliged to give up Heathrow slots, and direct transatlantic competition to/from this hub would remain limited to itself, its semi-ally American, United and Virgin. The prospect of Continental, Northwest, Delta, TWA and even British Midland gaining transatlantic slots at Heathrow cannot be attractive to an airline that earns 54% of its operating profit on these routes

Moreover, it has become obvious that BA is not getting anywhere with its argument that it should be allowed to sell the 267 Heathrow slots that the EC is demanding it relinquishes. Even if the UK department of trade and industry gives its approval for the slot sales, the Commission remains implacably opposed to the concept and would certainly attempt to block any monetary transactions.

The breakdown of the US-UK bilateral talks has added a further complication. The US delegation walked out in mid-October, complaining that the British appeared uninterested in an open skies agreement. The walk-out is a fairly standard negotiating ploy, but BA must be concerned by reports emanating from Washington that the DoT would not approve even a limited, non-immunised BA/AA codeshare agreement in the absence of open skies

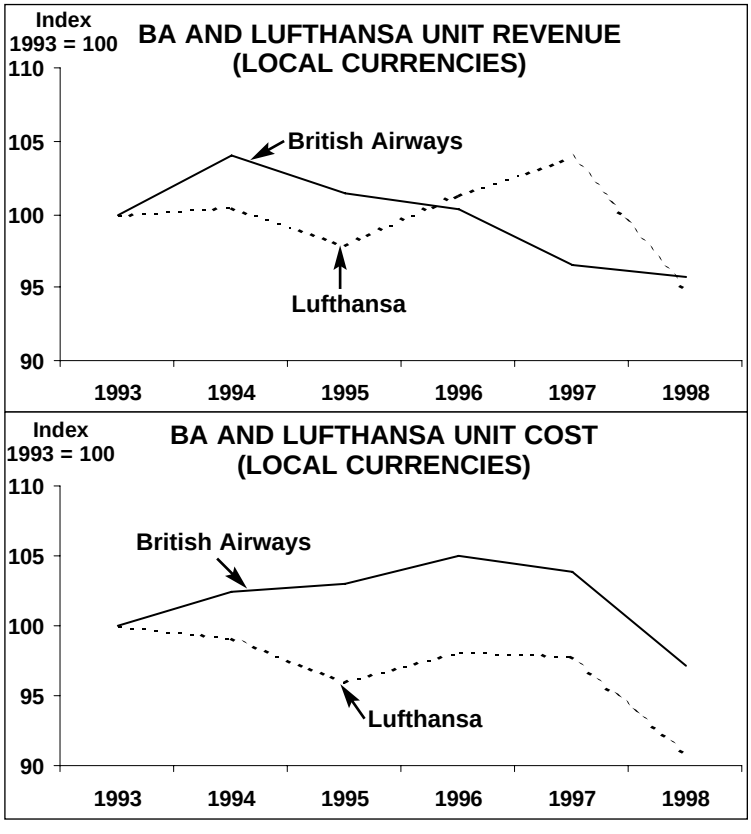
and increased access to Heathrow. Then the two airlines would be forced to argue their case against the DoT in court, with yet more delays.

The oneworld brand

The launch of oneworld was muted and received a mixed press coverage. BA and American would certainly have preferred to have been able to announce more at the launch but, of course, were unable to do so because of the uncertainties of their core alliance. At the same time something had to be done to counter Star's progress.

Star is now two to three years ahead of oneworld, with a brand image that is now widely recognised - and is set to extend this lead. More importantly, Lufthansa and United have started to steal traffic - particularly premium traffic - away from BA. The scale of traffic steal is almost impossible to measure, although BA executives are certain that it is taking place. Sterling's strength relative to the deutschemark has also undermined BA's traditional competitive advantage over Lufthansa.

Although BA's net profits and operating cashflow are still significantly above Lufthansa's, the gaps are closing. According to Goldman Sachs' forecast, BA should increase its net profit by $191m between 1997/98 and 1998/99 and its operating cashflow by $340m, but the equivalent figures for Lufthansa in 1998 and 1999 are $311m and $440m.



Whereas the Star alliance is being built up as a partnership, organised around a growing number of committees, oneworld is likely to evolve in a rather different manner, as BA and American are dominators, not co-operators. Already there are signs of tension.

Cathay is a reluctant partner, almost forced into joining as a consequence of the Asian crisis and by the indications that SIA will join Star in the near future. There are synergistic benefits especially if Cathay finalises its purchase of 40% of PAL (see pages 6-8). Cathay is treading very carefully and may be dubious about co-operating with traditional arch-rival Qantas. Canadian has experienced the downside of being a junior partner when its part-owner American forced it to hand over a large proportion of its transborder operations.

The next stage of oneworld's development is to expand beyond its anglophone core. JAL is certain to be co-opted next year, providing the alliance with a key link in northeast Asia and counterbalancing the Star/ANA axis. Less obviously, Swissair could now be considered as a potential oneworld member - its attraction lies not only in the revenue benefits that could be generated but also in its role as a supplier of other services to oneworld through its fellow group members, Nuance, Swissport and Gate Gourmet.

Then there is the question of the colourful tail-fins. BA made a brave attempt to globalise its brand by replacing the British flag with world art, but it is still taking flak from several quarters. Versions of the new tail-fin have been applied to Air Liberte aircraft in France and Comair jets in South Africa, but are the other members of oneworld expected to follow suit at some point?

Bob Ayling recently stated that he fundamentally regards alliances as a compromise forced upon the participants by archaic laws on national ownership - "If we could merge, we would merge", he said. So the probable long-term vision for oneworld, when ownership rules are abandoned, is that BA and American (and possibly JAL) will indeed merge into a true multinational, along the lines of Unilever, BAT or Shell. Airlines like Qantas and Canadian may well end up being 100% owned,

while minority stakes will be sought in Cathay and others.

European strategy

That BA prefers to exert management control wherever possible is revealed in its purchase of controlling stakes in European carriers Air Liberte (which in turn is making a bid for AOM) and Deutsche BA. In recent years BA has scarcely broken even on its European services, but now it seems to be building a coherent strategy based partly on future A320 communality and hub strength.

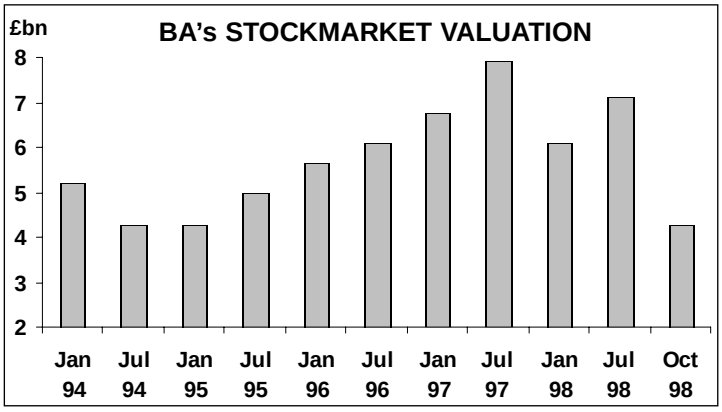
With Air Liberte plus AOM, BA will have a powerful presence at Paris Orly. In addition, American - which also flies there - has just announced a codesharing agreement with Air Liberte. BA's lingering worry is that the French authorities will attempt to shift all intercontinental services from Orly to CDG - a plan that was floated by the transport ministry a few months ago.

BA has already experienced fierce resistance to its intra-European expansion. When Deutsche BA attempted to get into Frankfurt earlier this year it found that Lufthansa was determined to match its fares on Munich-Frankfurt, even if DBA went down to zero. Eventually DBA had to admit defeat.

When the regulatory regime is clarified, BA will have the possibility of using its continental European partners for long-haul services; for example, Air Liberte could operate transatlantic services from CDG. This would be a new and direct way of attacking the competing alliances.

BA's current aim is to ensure that Lufthansa/Star does not enjoy a completely dominant position in its traditional northern and eastern European markets. Hence, its alliance with Finnair and the build-up of codesharing operations at Stockholm (see Briefing, *Aviation Strategy* October 1988), its block-seat arrangement with LOT on Warsaw-Heathrow and its possible interest in codesharing with Malev.

BA has been willing to take the unusual step (for it) of buying a small stake - 5% - in Iberia, which will not convey any management control. This is in effect its entry ticket into the Spanish/Latin American market and is part of a global play whereby American will also invest in Iberia and in Aerolineas Argentinas in return for an immunised alliance with Aerolineas. It will be interesting to see if this investment materialises, given the delays



American is encountering in completing the Argentinian deal, the BA/American regulatory impasse and also the uncertainty over the date of Iberia's privatisation.

Airport policy

BA, frustrated by the length of time the Terminal Five is taking and concerned by the rapid development of Paris (CDG will have 50% more runway capacity than LHR by 2000), complains noisily about the airport constraints it faces. It needs T5 if it is going to ensure that its promises of seamless service are met. Currently BA operates from T1 and T4, American is at T3 as is JAL, Iberia and Malev are based at T2 while Finnair is back at T1.

But BA has been able to implement an effective airport system strategy.

It has moved significant number of mainly long-haul routes to Gatwick from Heathrow in the past few years, including low-yield, tourist-orientated routes to the Caribbean and high-yield routes to Africa and Latin America where the regulatory regimes limit the amount of competition. Gatwick is now a very effective hub and has finally moved into profit some seven years after BA bought out the bankrupt Dan-Air.

At Gatwick BA has made heavy use of franchisees, notably CityFlyer and GB Airways, on thin and/or short-haul routes. And now there is speculation that BA is going to move more European flights to Stansted to be operated by Go. But such a move probably wouldn't be implemented until the question of the BA/AA alliance and the slot give-ups is finally resolved. Then BA can expect union confrontation plus more regulatory problems as the Commission will listen very favourably to the independent low-cost carriers' complaints of unfair subsidisation of Go by its parent.

The benefits of hub-and-spoke networks

Airline networks and schedules are increasingly being seen as key marketing tools in their own right, and one of the most important changes to airline operations in recent years has been the shift towards hub and spoke networks. Here, in the first of two articles on hubbing, Dr Nigel Dennis, senior research fellow at the University of Westminster's Transport Studies Group, examines why hubbing is so important and why it lies at the centre of any attempt to maximise the potential of an airline network.

• Increase in market coverage

The most immediate benefit of hub and spoke networks is to increase greatly the number of city pair markets that an airline can serve for a given volume of output. Consolidating many different traffic flows together through a hub can thus offer a very efficient means of relating supply to demand.

• Minimising the transfer time

If the passenger is prepared to wait an indefinite time at the hub, connections can be achieved between all services operating to and from it. In reality, long delays at the transfer airport are unattractive especially where the actual flying time is short. If alternative routes are available, a considerable drain of traffic may be experienced (for every 30 minutes spent on the ground, the passenger could fly another 400km).

An essential element of any serious attempt to maximise the scope of an airport as a hub is to concentrate activity into a limited number of peaks or waves during the day. These should see a large number of inbound flights arriving in a short space of time, then departing again as soon as a sufficient interval in which to redistribute passengers and their luggage has elapsed.

Although the volume of flights at a busy airport such as Heathrow ensures that many connection possibilities will exist by chance, it is only through operating waves of flights that a consistent connecting timetable can be provided, with services in both directions in each city-pair market and a transfer time close to the optimal. But high frequencies are not a prerequisite for hubbing. Indeed at many US hubs only about three flights per day are operated on most routes.

Costs will increase as a consequence of creating these artificial peaks of activity but this can be offset through the economies of consolidating traffic onto larger aircraft or operating at higher load factors. The marketing benefits are potentially much greater.

• Elimination of interlining

Commercial agreements between airlines have been a major component of regulation in air passenger transport. Multilateral interline procedures were recognised as being in both the operators' and the public's interest. For the airlines it was seen as essential to attract business that they could not otherwise serve.

The demise of these traditional arrangements has been most marked since deregulation in the US. Whereas half the passengers changing aircraft in the US in 1977 also changed airlines, this figure has fallen to less than 10% today. In Europe too, on-line or codeshare connections are increasingly dominating the market. Whereas the proportion of transfers at Heathrow that were BA-BA was only 27% in 1984, this had risen to 43% by 1991 and is nearer 60% today. BA-BA pairings, however, account for only about 16% of the possible linkages at Heathrow. This means BA-BA transfers sell on average six times better than those involving any other pairing of airlines. If one further removed codeshare connections such as those between British Midland and various carriers, the remaining interline transfers such as AF-BA or SK-AA are clearly little used.

The reasons behind this shift to hubbing are as follows: without restrictions on route entry, airlines have been able to enter markets previously closed to them. By routing these services through a common hub, on-line travel can be provided. Furthermore, waving of flight schedules ensures that the probability of the first outgoing service to any particular destination being by the same airline as the delivering flight is disproportionately

high. Consequently, it no longer becomes necessary for airlines to offer interlineable fares in many important markets, since it is possible for them to supply an optimal service of their own.

Subsequent expansion of point-to-point services in the US by airlines such as Southwest has been largely counter-balanced by the disappearance of Eastern in the N.E.-Florida market and Air Cal and PSA in California. Other new entrants such as America West, Midwest Express, Reno Air and even Air Tran (the renamed Valujet) operate essentially hubbed networks. In Europe, Virgin Express is a hub-and-spoke operation. The Majors have tended to divert the resources from merged airlines to strengthen their hubs. It should, however, also be noted that hubbing has not led to a huge switch from direct to indirect travel. Although some non-hub cities have lost certain non-stop links, many new non-stop flights have become available from the hub cities themselves.

An extension of the on-line connection concept involves bilateral interlining with complementary carriers. This has grown considerably in recent years, assisted by devices such as code-sharing. It is thus increasingly individual airlines, or groups of airlines, that form a hub at a particular location. The traditional concept of a hub simply as a large airport is no longer very valid.

• Maximising the number of marketable connections: directional hubs

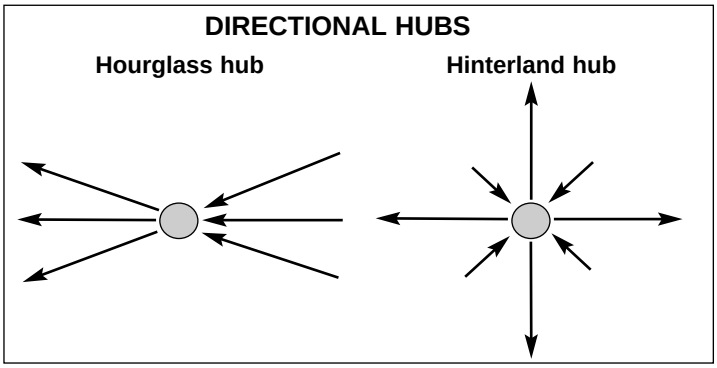
It is apparent that not all possible connections through a hub will be of value. Where a significant back-track is involved, passengers are likely to be deterred by the increased flying time while airlines may be unable to offer a viable fare by the circuitous route.

Connections within a hub wave will be universally good while those between waves will be relatively poor. Although the greatest number of linkages would be achieved by concentrating all activity into one or two huge waves each day, this is usually impractical. The aim therefore is to reduce the number of flights in each wave while ensuring as far as possible that it is the least marketable linkages which are lost. This can be achieved by seeking sub-groups within the set of routes operated from the airport between which there is a major demand for connecting travel but within which there is not. Whereas with traditional scheduling methods, aircraft return back on the same route from which they originated, they should now proceed on through the hub to a location from the contrasting set. This ensures that all the immediate connections will be marketable, which cannot be achieved with a random timetable and maximises the efficiency of the hub for any given level of resources.

The most straightforward separation that may be adopted is to introduce a geographical orientation such as East-West so that flights from one region operate through the hub to points broadly in the opposite direction beyond it - so-called *hourglass hubs.* It is demonstrated in the classic East-West hubs of the US such as Chicago, St Louis and Dallas. The schedules facilitate journeys such as Boston-San Diego or Miami-Seattle but not Boston-Miami or San Diego-Seattle. In Europe, Copenhagen (Scandinavia-Europe) and Vienna (East-West) follow this pattern, albeit on a smaller scale.

If this arrangement is not appropriate, the principal alternative is a differentiation by length of route. This features short sectors operated between the hub and nearby cities in order to generate feed for the longer distance trunk routes. As one stage of the journey is much longer than the other, the hub can become multi-directional for connections between these groups as back-tracks and dog-legs will not be of significance. These can be described as *hinterland hubs* because the central airport serves as a distribution point for air travel to and from its surrounding catchment area.

There are several examples of ‘niche’ hubs in the US following this pattern - Midwest Express at Milwaukee and the former USAir hub at Dayton - while in Europe, a number of airports such as Amsterdam and Zurich are primarily aimed at being interfaces between short-haul and long-haul flights.



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
August 98	17.5	12.2	69.9	18.5	15.5	83.7	11.8	9.3	78.8	41.4	33.7	81.5	61.7	48.1	77.9
Ann. chng	7.3%	7.2%	-0.1	7.6%	6.5%	-0.9	2.4%	2.5%	0.1	6.4%	6.3%	-0.1	6.8%	6.7%	-0.1
Jan-Aug 98	125.0	80.4	64.4	127.6	99.7	78.1	90.2	66.6	73.8	299.4	228.2	76.2	444.8	321.9	72.4
Ann. chng	7.5%	9.0%	0.9	9.1%	7.8%	-0.9	5.7%	3.7%	-1.4	8.4%	7.1%	-0.9	8.2%	7.5%	-0.5

Source: AEA.

US MAJORS' SCHEDULED TRAFFIC

	Domestic			North Atlantic			Pacific			Latin America			Total international		
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %
1990	863.1	523.2	60.6	121.3	84.2	69.4	106.7	75.8	71.0	42.2	26.6	63.0	270.2	186.5	69.0
1991	835.1	512.7	61.4	108.0	75.2	69.6	117.0	78.5	67.1	44.3	27.4	61.8	269.2	181.0	67.2
1992	857.8	536.9	62.6	134.4	92.4	68.7	123.1	85.0	69.0	48.0	27.4	57.0	305.4	204.7	67.0
1993	867.7	538.5	62.1	140.3	97.0	69.2	112.5	79.7	70.8	55.8	32.5	58.2	308.7	209.2	67.8
1994	886.9	575.6	64.9	136.1	99.5	73.0	107.3	78.2	72.9	56.8	35.2	62.0	300.3	212.9	70.9
1995	900.4	591.4	65.7	130.4	98.5	75.6	114.3	83.7	73.2	62.1	39.1	63.0	306.7	221.3	72.1
1996	925.7	634.4	68.5	132.6	101.9	76.8	118.0	89.2	75.6	66.1	42.3	64.0	316.7	233.3	73.7
1997	953.3	663.7	69.6	138.1	108.9	78.9	122.0	91.2	74.7	71.3	46.4	65.1	331.2	246.5	74.4
August 98	83.9	63.7	75.9										31.5	24.6	78.3
Ann. chng	0.3%	0.9%	0.1										3.8%	1.1%	-2.1
Jan-Aug 98	641.0	459.5	71.7										234.0	172.3	73.6
Ann. chng	0.6%	2.1%	1.0										6.5%	4.3%	-1.6

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

ICAO WORLD TRAFFIC AND ESG FORECAST

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

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

DEMAND TRENDS (1990=100)

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

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

COST INDICES (1990=100)

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

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

FINANCIAL TRENDS (1990=100)

	Inflation (1990=100)						Exchange rates (against US$)						LIBOR
	US	UK	Germany	France	Japan		UK	Germ.	France	Switz.	ECU	Japan	6 month Euro-$
1990	100	100	100	100	100	**1990**	0.563	1.616	5.446	1.389	0.788	144.8	8.27%
1991	104	106	104	103	103	**1991**	0.567	1.659	5.641	1.434	0.809	134.5	5.91%
1992	107	107	109	106	105	**1992**	0.570	1.562	5.294	1.406	0.773	126.7	3.84%
1993	111	109	114	108	106	**1993**	0.666	1.653	5.662	1.477	0.854	111.2	3.36%
1994	113	109	117	110	107	**1994**	0.653	1.623	5.552	1.367	0.843	102.2	5.06%
1995	117	112	119	112	107	**1995**	0.634	1.433	4.991	1.182	0.765	94.1	6.12%
1996	120	114	121	113	107	**1996**	0.641	1.505	5.116	1.236	0.788	108.8	4.48%
1997	122	117	123	114	108	**1997**	0.611	1.734	5.836	1.451	0.884	121.1	5.85%
***1998**	123	119	125	116	109	**Oct 1998**	0.593	1.645	5.516	1.344	0.836	118.6	4.97%**
***1999**	126	122	127	117	109								

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

ENGINE PRICES

	Aircraft types	Price ($m)		Aircraft types	Price ($m)		Aircraft types	Price ($m)
Pratt & Whitney			CF6-80C2A5	A300	6.4	Trent 800	777	9.6
JT8D-217/9	MD-80	3.0	CF6-80C2A8	A310	5.4	Trent 700	A330	7.9
PW20-37/40	757	4.9	CF6-80C2D	MD-11	6.7			
PW40-50/60	747	6.4	CF6-80E1A	A330	7.7	**IAE**		
PW40-56/60	767	6.4	CF34	Canadair RJ	2.0	V2524	A319	3.9
PW40-74/84	777	9.4				V2525	A320	4.3
PW4152	A310	5.4	**CFM International**			V2530	A321	4.8
PW4158	A300	6.4	CFM56-3	737-300/500	3.3	V2525-D4	MD-90	3.6
PW4168	A330	7.2	CFM56-5B	A319/20/21	4.5			
PW4460	MD-11	6.5	CFM56-5C	A340	5.0	**AVCO**		
			CFM56-7	737-600/900	3.4	LD507	Avro RJ	1.5
General Electric								
CF6-80C2B1F	747	6.4	**Rolls Royce**			**Allison**		
CF6-80C2B4	767	6.4	RB211-524	767, 747	6.5	GMA3007	Emb145	1.9
GE-90	777	9.5	RB211-535	757	4.9			

JET AND TURBOPROP ORDERS

	Date	Buyer	Order	Price	Delivery	Other information/engines
ATR						
Airbus	Oct 20	Lufthansa	10 A340-300s, 6 A321s		4Q99+	
BAe						
Boeing	Oct 21	TWA	4 757-200s		99	
Bombardier	Oct 21	Kendell Airlines	12 CRJ-200s		4Q99-2Q01	+ 12 options
	Oct 1	Comair	30 CRJ-100s,			+ 15 CRJ-100 options
			20 CRJ-700s	$1bn	3Q99-08	+ 70 CRJ-700 options
Embraer	Oct 19	Trans State AL	6 ERJ-145s			From options
Fairchild Dornier	-					

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

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

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

	Group revenue	Group costs	Group operating profit	Group net profit	Total ASK	Total RPK	Load factor	Group rev. per total ASK	Group costs per total ASK	Total pax.	Total ATK	Total RTK	Load factor	Group employees
	US$m	US$m	US$m	US$m	m	m	%	Cents	Cents	000s	m	m	%	
Korean Air														
Jan-Mar 97														
Apr-Jun 97														
Jul-Sep 97	TWELVE MONTH FIGURES													
Oct-Dec 97	3,029	2,774	255	-234	58,246.9	40,190.3	69.0	5.20	4.76	25,580		9,737.7		17,139
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98														
Malaysian														
Jan-Mar 97	2,581	2,459	122	132	40,096.9	27,903.7	69.6	6.44	6.13	15,371	6,149.2	3,706.8	60.3	22,546
Apr-Jun 97														
Jul-Sep 97														
Oct-Dec 97	TWELVE MONTH FIGURES													
Jan-Mar 98	2,208	2,289	-81	-81	42,294.0	28,698.0	67.9	5.22	5.41	15,117	6,411.0			
Apr-Jun 98														
Jul-Sep 98														
Singapore														
Jan-Mar 97	2,492	2,205	288	316	37,354.4	27,490.1	73.6	6.67	5.90	6,092	6,901.3	4,879.1	70.7	27,223
Apr-Jun 97	SIX MONTH FIGURES													
Jul-Sep 97	2,549	2,171	379	402	38,125.4	28,216.7	74.0	6.69	5.69	6,135	7,231.9	5,091.5	70.4	27,777
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	2,336	2,080	256	258	39,093.6	26,224.3	67.1	5.98	5.32	5,822	7,303.0	4,951.5	67.8	
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	2,232	2,013	219	278	41,466.2	29,456.2	71.0	5.38	4.86	6,240	7,693.4	5,225.2	67.9	
Thai Airways														
Jan-Mar 97	824	777	47	25	11,369.0	8,128.0	71.5	7.25	6.83	4,000	1,621.0			
Apr-Jun 97	773	775	-2	11	11,352.0	7,583.0	66.8	6.81	6.83	3,700	1,620.0			
Jul-Sep 97	697	672	25	-1,050	11,462.0	7,668.0	66.9	6.08	5.86	3,500	1,639.0			
Oct-Dec 97	656	649	7	-661	12,144.0	7,715.0	63.5	5.40	5.34	3,800	1,712.0			
Jan-Mar 98	631	558	73	610	12,211.0	8,522.0	69.8	5.17	4.57	4,000	1,715.0			
Apr-Jun 98	586	583	3	-179	12,084.0	7,963.0	65.9	4.84	4.82		1,700.0			
Jul-Sep 98														
Air France														
Jan-Mar 97	8,780	8,563	217	75	77,333.0	58,586.0	75.8	11.35	11.07	16,733		5,036.0		36,173
Apr-Jun 97	SIX MONTH FIGURES													
Jul-Sep 97	5,224	4,850	374	297			76.1							
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	5,126	5,079	47	18										
Apr-Jun 98	2,303				23,051.0	17,247.0	74.8							
Jul-Sep 98														
Alitalia														
Jan-Mar 97														
Apr-Jun 97														
Jul-Sep 97	TWELVE MONTH FIGURES													
Oct-Dec 97	5,083	4,878	205	161	50,171.4	35,992.3	71.7	10.13	9.72	24,552				18,676
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98														
BA														
Jan-Mar 97	3,179	3,130	49	113	36,211.0	25,416.0	70.2	8.78	8.64	9,070	5,057.0	3,456.0	68.3	60,188
Apr-Jun 97	3,624	3,395	229	260	39,697.0	28,756.0	72.4	9.13	8.55	10,613	5,589.0	3,875.0	69.3	60,083
Jul-Sep 97	3,646	3,319	327	244	40,909.0	30,884.0	75.5	8.91	8.11	11,194	5,711.0	4,098.0	71.8	61,321
Oct-Dec 97	3,580	3,436	144	110	40,059.0	26,929.0	67.2	8.94	8.58	9,837	5,618.0	3,791.0	67.5	61,144
Jan-Mar 98	3,335	3,210	125	119	39,256.0	26,476.0	67.4	8.50	8.18	9,311	5,485.0	3,642.0	66.4	60,770
Apr-Jun 98	3,783	3,497	286	217	44,030.0	31,135.0	70.7	8.59	7.94	11,409	6,174.0	4,157.0	67.3	62,938
Jul-Sep 98														
Iberia														
Jan-Mar 97														
Apr-Jun 97														
Jul-Sep 97	TWELVE MONTH FIGURES													
Oct-Dec 97	4,168	3,900	268	126*	37,797.6	27,679.2	73.2	11.03	10.32	15,432				
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98														
KLM														
Jan-Mar 97	1,361	1,444	-83	-153	16,279.0	12,455.0	76.5	8.36	8.87		2,838.0	2,090.0	73.6	31,912
Apr-Jun 97	1,692	1,566	126	99	17,310.0	13,640.0	78.8	9.77	9.05		2,996.0	2,335.0	77.9	34,804
Jul-Sep 97	1,842	1,592	250	438	18,798.0	15,747.0	83.8	9.80	8.47		3,233.0	2,589.0	80.1	34,928
Oct-Dec 97	1,630	1,570	60	23	18,096.0	13,555.0	74.9	9.01	8.68		3,098.0	2,404.0	77.6	35,092
Jan-Mar 98	1,538	1,568	-30	528	17,598.0	13,240.0	75.2	8.74	8.91		2,981.0	2,250.0	75.5	34,953
Apr-Jun 98	1,702	1,572	130	105	18,600.0	14,290.0	76.8	9.15	8.45		3,177.0	2,365.0	74.4	35,666
Jul-Sep 98														
Lufthansa* **														
Jan-Mar 97	3,198	3,198	-1	12*	28,099.0	19,726.0	70.2	11.38	11.38	9,186	4,985.0	3,477.0	69.7	57,291
Apr-Jun 97	3,654	3,463	192	220*	32,109.0	23,465.0	73.1	11.38	10.79	11,618	5,505.0	3,893.0	70.7	57,901
Jul-Sep 97	3,721	3,418	303	321*	33,739.0	26,410.0	78.3	11.03	10.13	12,807	5,787.0	4,298.0	74.3	58,178
Oct-Dec 97	3,989	3,566	423	384*	30,209.0	21,691.0	71.8	13.20	11.80	10,839	5,457.0	3,919.0	71.8	59,630
Jan-Mar 98	2,902	2,860	42	223	23,763.0	16,239.0	68.3	12.21	12.04	8,808	4,621.0	3,171.0	68.6	54,849
Apr-Jun 98	3,507	3,081	426	289	26,132.0	19,489.0	74.6	13.42	11.79	10,631	5,048.0	3,575.0	70.8	54,556
Jul-Sep 98														
SAS														
Jan-Mar 97	1,133	1,108	24	-36*	7,443.0	4,335.0	58.2	15.22	14.89	4,515				23,440
Apr-Jun 97	1,379	1,151	228	178*	7,962.0	5,392.0	67.7	17.31	14.46	5,617				23,904
Jul-Sep 97	1,244	1,093	151	83*	8,084.0	5,598.0	69.2	15.39	13.52	5,227				24,168
Oct-Dec 97	1,334	1,204	130	63*	7,771.0	4,939.0	63.6	17.17	15.49	5,212				28,716
Jan-Mar 98	1,184	1,077	106	76*	7,761.0	4,628.0	59.6	15.25	13.88	4,863				24,722
Apr-Jun 98	1,323	1,149	174	107*	7,546.0	5,260.0	69.7	17.53	15.23	5,449				25,174
Jul-Sep 98														
Swissair**														
Jan-Mar 97	SIX MONTH FIGURES													
Apr-Jun 97	1,787	1,724	63	76	17,464.4	11,880.7	68.0	10.23	9.87	7,643	3,340.6	2,291.9	68.6	10,163
Jul-Sep 97	SIX MONTH FIGURES													
Oct-Dec 97	2,084	1,946	138	147	18,934.8	13,770.8	72.7	11.01	10.28	6,352	3,536.4	2,538.1	71.8	10,132
Jan-Mar 98	SIX MONTH FIGURES													
Apr-Jun 98	1,907	1,780	127	86	18,983.8	13,138.7	70.5	10.05	9.38					9,756
Jul-Sep 98														

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

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