

Asia's recovery and the global balance

Further evidence is emerging of a continuing recovery in the Asia/Pacific market. The key question now is: can the recovery be sustained and so support the global supply and demand balance?

AAPA statistics for June 1999 showed a 8.8% annual increase in international RPKs, pushing the average load factor up to 72.8%. This was the ninth consecutive month of positive traffic numbers.

Airline stocks are acting as lead indicators of a return of business and consumer confidence to the region. Over the past 12 months Qantas has outperformed its local market by 68%, Korean by 67%, Thai by 60% (and the government has confirmed a part-privatisation target date at the end of this year) and Cathay by 25%.

Although the main Asia/Pacific airlines have some 120 widebodies on firm order (about 15% of the current fleet), a relatively modest amount is due for delivery in the period up to the end of 2000 - 37 747s, 777s and A330/340s and MD-11s, equating roughly to 4.5% of supply.

The logical strategy from the Asian carriers' perspective would be not to add any more capacity above this level, but to attempt to push yields back up from their still very depressed levels. From the perspective of US and European airlines the optimal situation would be for the Asian carriers to lease back a significant amount of capacity from the transatlantic routes. Lessors too are hoping for an increase in demand for 777-types which, despite their key role in airline downsizing strategies, are proving quite difficult to place at the moment.

The North Atlantic, in physical supply/demand terms, does not look too bad at the moment - 13% capacity growth for AEA airlines was almost matched by 12% traffic growth in the first six months of this year. But a worrying situation is developing in the South/Mid Atlantic market - which is now 36% the size of the North Atlantic in terms of RPKs - where capacity growth of 14% is almost double that of traffic growth, and load factors have dropped four points.

ASIAN WIDEBODY SUPPLY

1999/2000 deliveries

	747	777	A330/ A340	Wide- MD-11 bodies	Mid- 1999 fleet	Deliveries as % of fleet
JAL	5	7	-	-	12	8.8%
Thai	-	4	1	-	5	7.6%
Singapore	5	-	-	-	5	5.2%
ANA	-	5	-	-	5	4.4%
EVA	2	-	-	1	3	8.8%
Qantas	3	-	-	-	3	5.0%
Garuda	-	2	-	-	2	9.5%
China Airlines	1	-	-	-	1	2.3%
Cathay Pacific	-	1	-	-	1	1.7%
PAL	-	-	-	-	-	0.0%
Air New Zealand	-	-	-	-	-	0.0%
MAS	-	-	-	-	-	0.0%
Asiana	-	-	-	-	-	0.0%
Korean	-	-	-	-	-	0.0%
TOTAL	16	19	1	1	37	4.5%

Source: ACAS.

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British Midland's search for a global alliance

British Midland has suddenly shed its low profile, is actively seeking out a membership of a global alliance (and may be enquiring about future equity investments), and has instigated an advertising campaign attacking what it regards as excessive transatlantic business fares charged by, in particular, British Airways. Why the change?

Recent developments appear to be a little out of character for Sir Michael Bishop, the chairman and chief executive, who has a reputation for caution and pragmatism. British Midland has never bought widebodies (though it has options on two 767-300s and two A330-200s for Spring 2000 delivery), has only relatively recently put major emphasis on continental European expansion, and has been competitive rather than aggressive in terms of pricing.

Unlike Virgin, BMA did not oppose the BA/AA alliance. Rather Bishop has appeared sceptical about the benefits of global alliances, although he has been an arch-exponent of codeshare agreements signed with multiple partners - 18 currently.

However, the company's core strategy is clear: building up its slot position at Heathrow to the extent that it now controls around 1,100 weekly slots, 14% of the total. The value of the company is totally bound up with the value of these slots.

Although it is assumed that their value can only rise, it is worth pointing out that BMA has not extracted much profit from the Heathrow slots. Its 1998 results showed a pre-tax profit of £11m (\$18m) on revenues of £561m (\$926), the margin of 2% being the second highest achieved during the 1990s. BMA's results, in fact, are quite similar to those produced by British Airways on its intra-European and domestic network.

Converting some of these slots from intra-European to transatlantic would greatly enhance their earning potential, and this consideration undoubtedly lay behind BMA's recent attempts to reinstate transatlantic service (it did fly 707 charters to the US in the 70s). In February 1998 it applied for 10 licences from London-Heathrow

to US cities and was granted New York, Washington, Boston, Miami but failed to get Atlanta, Chicago, Denver, Houston, Los Angeles and Seattle.

In retrospect though, Bishop misread US-UK open skies progress, and has been totally frustrated by the collapse of the talks in July. BMA is now concentrating on Manchester (which lies outside Bermuda 2 bilateral and which has no slot constraints), having applied in January 1999 for licences to Boston, New York, Los Angeles and Washington. These have now been followed by new applications for licences from Manchester to Atlanta, Chicago, Cincinnati, Houston, Miami and Seattle.

The transatlantic influence

Entering into a global alliance is inextricably linked with the transatlantic strategy for various reasons.

First, BMA was advised by US DoT that in order to get approval to fly to the US it would have to give up its codeshare with American, as otherwise it would not be seen as increasing competition. In any case, the American relationship had been deteriorating since the formation of oneworld. That codeshare will now end in March 2000, and the others will have eventually to be dismantled as strategic alliances demand exclusivity.

Second, to cover the investment cost of transatlantic operation BMA would probably need financial support from larger airlines, and it would certainly require US feed and block space agreements from a large US domestic carrier.

Third, BMA is not a low cost airline, and its route structure may well be vulnerable to the new entrants. Through the transatlantic/global alliance strategy, BMA would be reducing its exposure to the low cost airlines as well as gaining marketing benefits through, for instance, full access to a global FFP.

Fourth, at some point in the future Bishop and his two partners in BBW, which owns 60% of BMA, will probably want to cash in their shares, either through a flotation or a trade sale, and their shares

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would normally be more highly valued if BMA were an integral part of one of the global alliances.

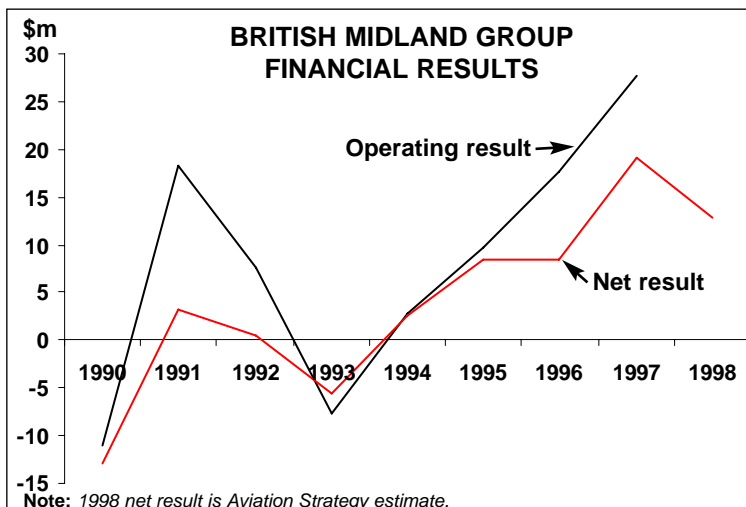
Bishop has categorically denied that the airline is for sale at present but it is likely that potential alliance partners have been asked to submit wide-ranging proposals, which could include expressions of interest in future equity participation. Complicating the question of investment in BMA is, of course, SAS's 40% share acquired in two tranches in 1988 and 1994.

Although the two airlines do not talk openly about their shareholders' agreement, *Aviation Strategy* understands that certain key clauses include the following:

- SAS is considered to be the main provider of further equity capital for BMA;
- BMA's current slot allocation at Heathrow cannot be voluntarily reduced;
- If Bishop ceases to be a director then SAS has an option to increase its stake to majority ownership;
- Confidential financial and strategic information about BMA may not be passed on from SAS's representatives at BMA to SAS or other airlines;
- The sale of shares in BMA to another airline requires SAS's consent;
- However, if BBW or one of the partners in BBW wants to sell shares to a third party, SAS has to be given the opportunity to place a competing bid to buy enough shares (roughly 10% of the total) in order to give it majority ownership of the company; and
- The price that SAS would have to pay to gain 50%-plus of the shares may be determined by an independent valuation of the whole airline by a merchant bank or auditor.

So it would appear that BMA's management is significantly constrained as far as selling its stake to an airline in an alliance other than Star is concerned. But it could still enter into a rival alliance and operate within that alliance regardless of the SAS stake. Indeed, SAS would appear to have realised few synergies from its investment in BMA, and its two directors on BMA's board are limited in their ability to influence the airline's direction. And if BMA were to opt for another alliance, then SAS would probably sooner or later chose to cash in on its investment - in the same way as Swissair, Delta and Singapore Airlines are now all clearing out their residual holdings in each other.

Against this background what are the relative merits of the various alliances for BMA?



- **Virgin Atlantic** Richard Branson has offered to take over BMA and appoint Bishop as chairman of combined grouping. This would increase Virgin's supply of Heathrow slots, and give BMA a long-haul partner. A combined BMA/Virgin Atlantic airline would be an attractive flotation, but this option looks unlikely because Bishop is focusing on the established global alliances.
- **Oneworld** No way; the EC and MMC would see to that.
- **Qualifyer** SAirGroup would provide good ancillary savings through Nuance/Gate Gourmet etc. and particularly ground handling through Swissport. But this grouping is not global and there would be no US feed. Also, BMA has historically been at loggerheads with Swissair over access to the Swiss market.
- **Wings** Northwest and Continental could deliver US feed. But BMA would not accept being assimilated into the new KLM/Alitalia virtual airline, and there would be conflicts with Buzz, the new low cost subsidiary formed out of KLMuk.
- **Air France/Delta** Delta would be a good source of US domestic feed and the US airline would underwrite BMA's transatlantic ambitions. There would be expansion possibilities at CDG. And, following their failure to capture Austrian, Air France and Delta would likely be the most generous in terms of future monetary transactions.
- **Star** United already serves Heathrow, so this alliance could fit in with BMA's transatlantic plans. Frankfurt would be a good hub for BMA, located sufficiently far from London. The Lufthansa and BMA European networks could be melded together. Finally, SAS's 40% stake makes Star the favourite alliance ahead of Delta/Air France.

FedEx: official airline of the Internet?

Over the past 12 months FedEx's stock price movement has resembled that of a volatile Internet stock rather than that of an established cargo airline. Indeed, until recently, certain US equity analysts have promoted FedEx as the safe way to play the stock market's obsessional affair with new technology stocks.

Shares in FedEx tripled in value from May 1998 to May 1999, but have since fallen by 40%. A profits warning was issued in September quoting two factors - rising fuel costs and a disappointing volume growth (3%) in US traffic for the three months to August 1999 as a result of customers running down their inventories. At the same time there are clear indications that faith in Internet stocks, with their inflated stockmarket valuation based entirely on future cashflow expectations, is beginning to evaporate.

But why was FedEx considered as a quasi-Internet stock in the first place?

Although the analysts highlighted FedEx's internet connections last year, the concept dates back to 1996 at least when *Wired*, the magazine for new technology entrepreneurs and their venture capitalists, labelled FedEx as "the official airline of the Internet".

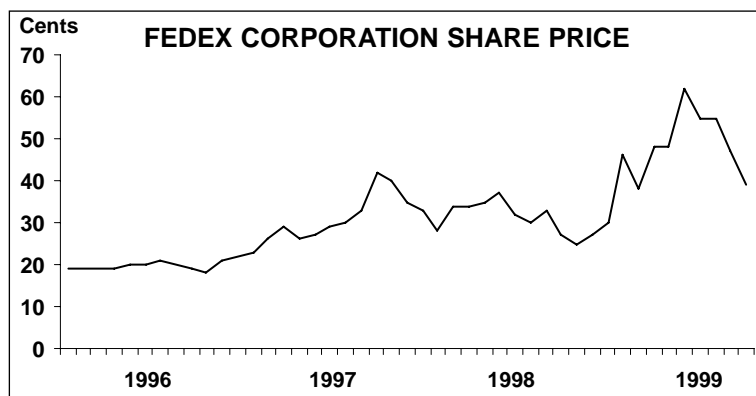
It seemed that FedEx was set to repeat the phenomenal growth it achieved in the late 1970s and 1980s when its management under Fred Smith recognised a key change in the demand for express freight. Consequently the airline was positioned not only to fulfil that

demand, but also to help fuel it. Companies increasingly needed to replace large, expensive, physical inventories with virtual inventories; in other words, they needed to be sure that packages of spares, documents etc would be delivered overnight with total reliability.

FedEx's marketing therefore emphasised the importance of the data attached to each shipment. Its proprietary online network, Cosmos, was able to track the status of every packet in the FedEx system and communicate this information to customers, or rather the 60% of customers who were able and/or willing to use FedEx's hardware and software. Then came the Internet and, in 1994, FedEx's website - www.fedex.com - not particularly remarkable now but, a mere five years ago, almost revolutionary in that it allowed potentially 100% of FedEx's customers to book and pay for its services electronically.

In April this year FedEx announced a joint-venture with Netscape, a subsidiary of America Online Inc., to create an Internet package portal. The aim is to simplify e-commerce transactions and to offer online purchasers personalised package status tracking. FedEx is the pre-selected carrier for all e-commerce transactions on Netscape Store, apparently a confirmation of FedEx's position as the Internet's official airline.

To those attuned to the e-commerce revolution it seemed that FedEx was uniquely positioned to take advantage of all the changes taking place in consumer behaviour and business-to-business activity. To quote from the seminal *Wired* article: "FedEx's vision of the future is a digital marketplace of cyberspace superstores, operated by managers who need only worry about marketing, customer service and counting the cash as it comes in. FedEx promises to make all the pieces fit together and do all the heavy lifting in terms of invoicing, inventory management, order fulfilment and product shipping. The payoff will come by pumping more packages through FedEx's network and by skimming a few percentage points



off the value of its transaction in exchange for providing the software and systems integration that makes it all happen.”

Internet hype?

However, reality hasn't quite conformed to this cyber-vision.

First, the e-commerce market has two different market segments - business-to-business trade (b-to-b) and business-to-customer trade (b-to-c). In the b-to-c segment there is not necessarily a connection between e-commerce and express delivery. For example, a person ordering a book or compact disk through the Internet from, say, Amazon.com, will normally have the purchase delivered by snail mail, otherwise the delivery cost would probably be more than the cost of the book itself.

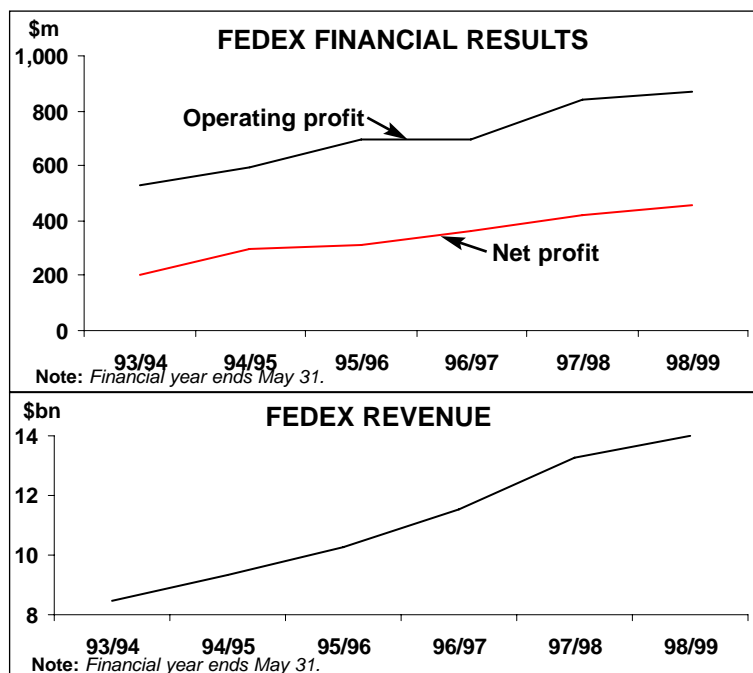
Nevertheless, the b-to-b segment (electronics, computer software and hardware, automotive parts, etc) is expected to grow significantly more rapidly than the b-to-c trade. In Europe, for example, TNT estimates that the b-to-b trade is expected to grow in Europe eight times faster than b-to-c, and is expected by 2001 to total nearly US\$60bn, while the b-to-c market will reach just US\$8bn. For the integrators it is the faster growing b-to-b market which is likely to provide the major growth opportunities

Second, in the short-term at least the growth of electronic communication must be having a negative effect on the volume of documents carried by express operators (although they point out that e-mail affects fax transmissions more than urgent letters). This decline will probably accelerate as legally binding electronic signatures become more widely accepted.

Third, FedEx has been facing intense competition not only from its big, conservative and highly efficient rival, UPS, (which has about 30% of the domestic US market compared with FedEx's 43%) but also from improved services being offered by scheduled airlines and freight forwarders, often in collaboration.

Fourth, FedEx has been impacted by Stage 3/Chapter 3 noise legislation which has required 727 fleets to be hushkitted and caused accelerated investment in new or converted A300 types.

Fifth, competition between the integrators has moved to a global stage, but outside their



domestic market the US giants often appear to be unclear about their strategies.

FedEx entered the Asian market back in 1985 and set up a hub in Taiwan. The acquisition in 1989 of Flying Tigers, which served 21 Asian markets, should have served to consolidate FedEx's position. However, wrangles between FedEx, the Taiwanese government and local freight forwarders forced it to downsize its Taipei operations. In 1995, FedEx chose Subic Bay near Manila in the Philippines as its Asian super-hub.

UPS did not arrive in Asia until 1988 when it acquired the Hong Kong carrier, Asian Courier Systems. It has apparently been able to overcome Taiwanese political issues more successfully than rival FedEx, and in 1997 opened its regional hub at Chiang Kai-Shek International Airport. Taiwan's geographic position is much closer to that of the main Asian commercial centres than Subic Bay, and this should provide UPS with an advantage.

FedEx's first foray into Europe was an unmitigated failure. In 1992 it was forced to pull out of Europe's domestic and cross-border parcel market to concentrate solely on intercontinental traffic. The company cited an immature market with too many low-cost, low-tech operators for its decision. Now it has returned to the market with a hub at CDG, Paris, and has

recently won extensive fifth freedom rights at Prestwick Airport in Scotland that will enable it to further develop this transatlantic hub.

Strong European competition

But in Europe, DHL, TNT and UPS are in stronger positions. DHL enjoys pre-eminence in the European express market with a market share in excess of 40%. TNT is the second largest player with a market share of some 15%. UPS first entered the European arena in 1976, setting up its regional hub in Cologne, Germany, 10 years later. Ranked a close third behind TNT in Europe, UPS has set itself the goal of catching and surpassing DHL. FedEx probably has less than 5% of the market.

A key characteristic of the European market is the links between TNT and KPN (the Dutch Post Office) and between DHL and Deutsche Post in Germany. These allow the post offices to combine their national parcel networks with the international delivery systems developed by the integrators. The post

offices have strong cash flow but a relatively mature business; the integrators require cash to upgrade their systems and aircraft fleets and offer growth rates that historically have averaged some 20% a year. Both the mail and express businesses are largely driven by scale. Given that both mail and express require high fixed-cost networks, success depends on the ability to attract high volumes to ensure that network capacity is used as efficiently as possible.

This structure provides a formidable barrier to entry for the US integrators, one that UPS is challenging in the courts. UPS is arguing that profits from Deutsche Post's domestic monopoly are illegally subsidising the express services to/from Germany.

For UPS and FedEx, breaking down these institutional barriers is a prerequisite to industry consolidation (UPS is rumoured to be planning to use part of its upcoming \$3bn IPO to launch a bid for TNT). Then they can begin to exploit the e-commerce potential of Europe, which is probably 3-4 years behind the US.

Why has the US outlook suddenly changed?

The outlook for the US airline industry has suddenly worsened. Over the past month, several major carriers have issued profit warnings and Wall Street has come out in force to revise down earnings estimates for the third and fourth quarters and for the year. The economy is doing just fine, so what's causing the trouble?

The 4-5% decline in aggregate net earnings now expected for the September quarter is blamed primarily on higher fuel prices and a weaker domestic revenue environment. Both of these negative trends became more pronounced as the summer progressed. But while the fuel price hike was anticipated, weaker yields were not. August saw a 2.4% decline in domestic unit revenues (RASM) and analysts suggest that the September fall could be as high as 5%.

However, there is no sign of any fundamental weakening of demand. The unit rev-

enue trends reflect fare discounting, made necessary by capacity growth, as well as the impact of two extraordinary events: last month's Hurricane Floyd and the pilot strike at Northwest in September 1998. PaineWebber estimates that Floyd and the absence of the traffic and yield boost enjoyed by Northwest's competitors last year accounted for 75% of the revenue softness observed in September.

Hurricane Floyd had a devastating impact in terms of schedule disruption, as all airports from Miami to Maine were closed as the storm worked its way up the East coast during the third week of September.

According to an estimate released by Deutsche Banc Alex. Brown, Floyd cost American \$25m and Delta and Continental \$20m each in lost revenues. The total impact on the industry is likely to exceed \$100m.

The brunt of the fuel price hike will be felt in the fourth quarter, which will now also see a decline in industry earnings. The worst-positioned are carriers like US Airways and Southwest that have not hedged their fuel costs, but others such as Delta have effectively eliminated the impact through hedging.

Capacity creeping up

Capacity growth has added to the problem, though in the summer it was running at a still-reasonable 5-6% (compared with last year's 3.2%). But ASM growth seems to be accelerating, which makes it increasingly likely that some of the carriers will again scale back their expansion plans in the early part of the winter season.

Air traffic control delays, which surged in July-August, have also been cited as a reason for the profit decline, but the biggest problems have been self-inflicted. The best example here is US Airways, which has continued to experience a high level of cancella-

Air France in the ascendancy

Air France has moved from the ranks of perennial under-performer to at least a position of equality with some of the top flight of European Majors. What is behind the turnaround?

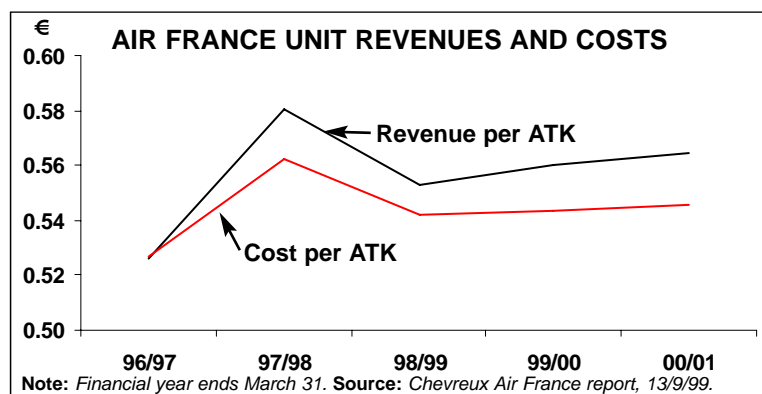
The new bilateral with the US (which will lead to open skies in a maximum of five years), has unblocked some of the capacity constraints that have faced Air France since 1991. In 1998 the number of US cities served by Air France grew from 36 to 94 through codesharing with Delta and Continental. This figure will increase to 162 this year.

Air France had in the 1990s steadily been losing transatlantic market share to carriers at London and Amsterdam. It is now able to offer an improved frequency to attract business class travellers and is altering its fleet mix (747 to 777) to increase both the proportion and the num-

ber of business class seats available. The carrier recently warned that it does not expect to post a third-quarter profit and that the current difficulties are likely to carry over into the fourth quarter.

But there are some bright spots on the horizon. PaineWebber analyst Sam Buttrick mentions a possible near-term fare increase to mitigate fuel, likely international RASM growth, plummeting distribution costs and continued asset sales. The gradual recovery in Asia has certainly brightened United's prospects, and the same can be said about Northwest, which is recovering nicely after last year's strike even though it still expects a \$100m loss from Pacific operations this year. News on the labour front is mixed. The tentative agreements recently reached by US Airways with its machinists and Delta with its pilots on 777 and 767-400 flying offer hope of a peaceful winter, but American and Northwest are back to square one after flight attendants rejected their tentative contracts.

Overall, unit revenues were actually up by 1% in the latest quarter in contrast to a fall



of about 6% at British Airways. As well as capturing more business travellers, Air France is operating at high load factors, 76%, presumably because of the increased connecting possibilities at Charles de Gaulle (CDG).

The huge advantage of being based at CDG is that Air France has much greater freedom than all of its competitors to grow its network. Environmental opposition is muted and government support strong.

In 1999 Air France introduced a new six-wave system at CDG, and this summer there has been a 44% increase in connecting opportunities. The opening of the third runway at CDG in April 1999 has further increased Air France's ability to fine tune operations. For winter 1999/2000 the long-haul schedule will have 87% non-stop services, the highest percentage of all European Majors, and over half medium-haul destinations have at least four daily frequencies.

The speed of capacity growth is, at least for the moment, constraining unit costs. Although total costs in the last quarter rose by 12%, unit costs fell by just under 1%.

Air France has also benefited from the comparative weakness of the Euro, which has boosted US dollar, sterling and other revenues, and has given a fillip to tourism. The "Franc Fort" policy of successive French governments had depressed inbound flows.

Senior management at Air France has been focussed on getting the core business

in good shape ahead of the airline's full flotation. It has managed not to be distracted by protracted alliance negotiations, regulatory arguments and troublesome subsidiaries (having learnt the painful lesson of the state aid sagas and unproductive investments in Sabena and CSA).

Staff morale seems to be well up. The move from the public to private sector has left the employees with 11.4% of total share capital, which should logically curtail their propensity to strike.

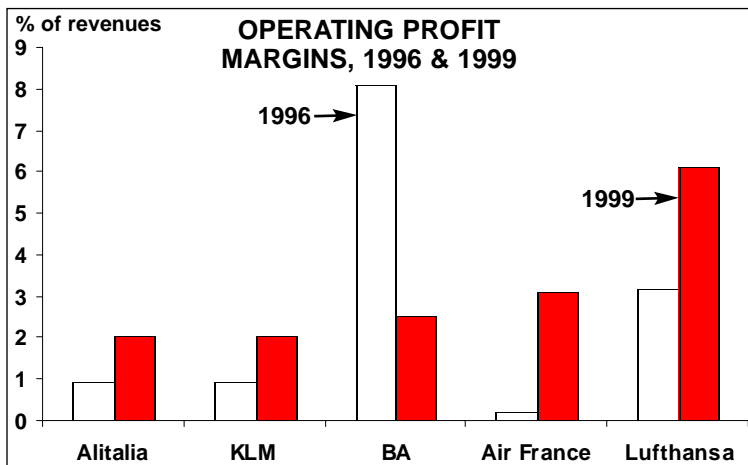
Of course, it helps greatly that Air France has so far escaped serious competition from low-cost airlines. The French generally continue to be loyal to French products, so with no alternative choice of French carrier on medium/long-haul routes, Air France is in a quite enviable situation.

The break-up of Air France's relationship with Continental once it formally joins the KLM/Northwest/Alitalia alliance will be more than compensated by a closer relationship with alliance partner Delta, one of Air France's largest transatlantic competitors. Air France predicts Ff1bn (€152m) of net benefits from the Delta alliance over the next three years; interestingly, 70% of these benefits are to come from the revenue side, 30% from cost reduction.

Comparisons

When Air France was constructing its turnaround plan in the mid-1990s, Lufthansa was regarded as the model, as it was considered to be too much of a leap to try to emulate British Airways. Since then, however, the European scene has changed. Air France, on an operating profit margin measure, is now ahead of British Airways (and KLM and Alitalia), but is still well behind Lufthansa.

The ordering will change again. And a potential threat to Air France comes from low-cost competition (Ryanair's 1999 operating profit margin of 22% would be up the scale of this graph), a challenge which Air France is not prepared for. And, given the struggle to contain costs so far, it is very difficult to see how Air France could prepare itself for a concerted attack.



Delta: great financial shape, but what about the unions?

Delta has continued to perform extremely well financially. It reported record operating and net earnings of \$1.9bn and \$1.1bn for its financial year ended June 30, up 10% on the previous year. The results represented profit margins of 12.7% and 7.5% respectively. Delta was one of few major US carriers to post improved earnings for the June quarter.

The strong results reflect the company's ability to retain a low unit cost structure while steadily improving unit revenues. The 1994-96 "Leadership 7.5" project, which slashed operating costs by \$1.6bn, made Delta the lowest-cost major network carrier in the US. The project had to be abandoned early due to the more pressing need to restore service quality and employee morale. But a favourable four-year pilot contract in April 1996, low-cost subsidiary Delta Express (October 1996) and, above all, tight cost controls have helped keep unit costs stable - at an enviable 8.80-8.90 cents per ASM - over the past three years.

Delta's unit revenues have improved steadily since 1994. For more than a year now, the carrier has outpaced the industry in revenue per ASM growth virtually every month, and it went against the industry trend by posting a small improvement in the June quarter. This reflects success in restoring on-time performance and making progress in mending customer service, which Delta's new CEO Leo Mullin made his top priority soon after taking up his position two years ago.

Delta's fuel-hedging strategy has taken the sting out of the rise in fuel prices. Taking advantage of favourable market conditions earlier this year, the carrier hedged about 80% of its estimated jet fuel purchases in the current financial year ending June 30, 2000. This will give it a competitive advantage. Another positive is that the Atlanta hub has been relatively insulated from the air traffic

control problems that have plagued the US airline industry in recent months.

Overall, Delta is in great financial shape. The earlier restructuring gave it a lower debt structure and investment-grade credit ratings. It pays regular cash dividends, implemented a two-for-one common stock split a year ago and has repurchased \$1.7bn worth of common stock since the programme was introduced in April 1996.

All of that, plus a puzzlingly sharp fall in Delta's share price this year, have made Delta one of the best-liked long-haul carriers on Wall Street (Southwest is the perennial short-haul favourite). Many analysts feel that the stock is undervalued in the light of the earnings strength and long-term potential.

As the outlook for US airlines has worsened in recent months, Delta's earnings are also expected to fall this year and next, beginning with the quarter ended September 30. September was a bad month for Delta, its wholly-owned commuter partner Atlantic Southeast (ASA) and Delta Express because of the havoc wreaked by Hurricane Floyd all along the East coast. Merrill Lynch calculated the damage at 1,100 flight cancellations.

Add to that softening domestic demand and renewed pressure on transatlantic yields, and Delta's September quarter earnings are now expected to fall from last year's \$2.08 to \$1.94 per share. This would still be better than the profit falls anticipated for many other large network carriers. And in the longer term, Delta's performance is certainly expected to exceed the industry average. The latest First Call consensus forecast is a profit of \$6.72 per diluted share for FY2000 (to June 30), which would represent a 5.4% decline from last year's \$7.10.

But Delta faces tough challenges on the labour front. Over the past year alliance plans have been scuppered and the fleet strategy has been jeopardised by the pilots' refusal to co-operate. First, talks on

domestic codesharing with United had to be abandoned a year ago when ALPA refused to give the deal its blessing without gaining a voting board seat. Then in June Delta had to defer deliveries of all 777-200s on order because it could not secure agreement with ALPA on pay rates and work rules for the aircraft.

The carrier explained at the time that in light of its commitment to superior customer service, it could not risk taking delivery of any new aircraft without prior agreement with the pilots. It had already initiated a substitution process by agreeing to accept delivery of four 767-300ERs.

The two sides reached tentative agreement on the 777 on September 23. But even if the deal is ratified, labour pressures will not ease as by May Delta has to secure a new contract with its pilots. It also has to continue to try to deter further unionisation.

Work also remains to be done to restore customer service to the pre-Leadership 7.5 levels. This will be all the more important in the light of the sharply increased competition in East coast markets. Delta's extensive operations there make it probably the second most vulnerable of the major carriers (after US Airways) to new domestic yield pressures, which are now the greatest in the East.

And then there is the challenge of implementing and expanding the newly-formed global alliance with Air France - relatively late in the day compared to competitors' efforts. How does Delta intend to catch up?

Labour issues and fleet plans

The recent tentative agreement with the pilots covers pay rates and work rules for the 777 as well as the 767-400, for which Delta is the launch customer with 21 aircraft on order for delivery from May next year.

The pay rates - \$250 an hour for the 777 and \$230 for the 767-400 - seem a fairly straight compromise on the original widely diverging positions. They still make Delta's pilots the best-paid in the industry - by comparison, American's top 777 rate is believed to be \$225.

The package also includes improvements that apply to all 9,200 Delta pilots, including converting the present profit-sharing plan into a 6% pay rise on January 1, granting a separate 3% pay rise for all other than 777, 767-400 and new-generation 737 pilots, and eliminating the "B-scale" pay rate. But these provisions will be subject to renegotiation during full-scale contract talks.

The deal was due to go to ALPA's Master Executive Council for approval on September 30 and will then be submitted for a membership ratification vote, with ballot count tentatively scheduled for November. It is hard to envisage a voting-down scenario as the pilots would be the biggest losers, but then again recent industry experience is not encouraging.

Once ratified, Delta is expected to put back on track the earlier 777 order as the aircraft was an integral part of its growth plans and a perfect fit for its European routes. The two 777s already in the fleet look likely to return to service in the winter schedule. The 767-400s will replace Delta's domestic L-1011 fleet.

Agreement with the pilots on new-generation 737 flying was reached amicably last year. About a year ago Delta accelerated the retirement of its 727 fleet - all will now be phased out by 2005 as 737-800s are delivered. In March the carrier

DELTA FLEET PLANS

	Current fleet	Orders	Options	Delivery/retirement schedule
727-200	120	0	0	To be retired by 2005
737-200	54	0	0	
737-300	26	0	0	
737-800	8	99	0	Delivery in 1999-2003
757-200	97	18	0	Delivery in 1999-2000
757-200EM	4	0	0	
767-200	15	0	0	
767-300	26	0	0	
767-300EREM	53	8	0	Delivery by 2006
767-400EREM	0	21	0	Delivery by 2006
777-200ER	2	11	0	Delivery by 2005
MD-88	120	0	0	
MD-90	16	0	101	
MD-11	15	0	116	
L-1011-1	20	0	0	
L-1011-40	4	0	0	
L-1011-200	1	0	0	
L-1011-250	6	0	0	
L-1011-500	16	0	0	
TOTAL	603	157	217	

Note: Deliveries depend upon union agreement. **Source:** ACAS.

announced a tentative agreement to sell the 727 fleet to United Technologies over six years, which will simplify the retirement process and provide substantial incremental cash flow.

The 777 deal offers some hope for the overall pilot contract negotiations, which began six months early on September 8 so that a deal could be reached by the May 2 target. However, it will be a tough process as the pilots expect significant pay increases in the light of the company's record profits. Many still fret over the \$1bn wage and benefit concessions made in 1996.

As the talks opened, the pilots asked for improved overtime pay and retirement benefits, a voting board seat, elimination of a two-tier wage system (due to Delta Express) and more restrictions on marketing agreements with foreign and domestic partners. Although wage demands have not yet been specified, ALPA said that the pilots would require a 21% rise simply to cover inflation and the 1996 concessions.

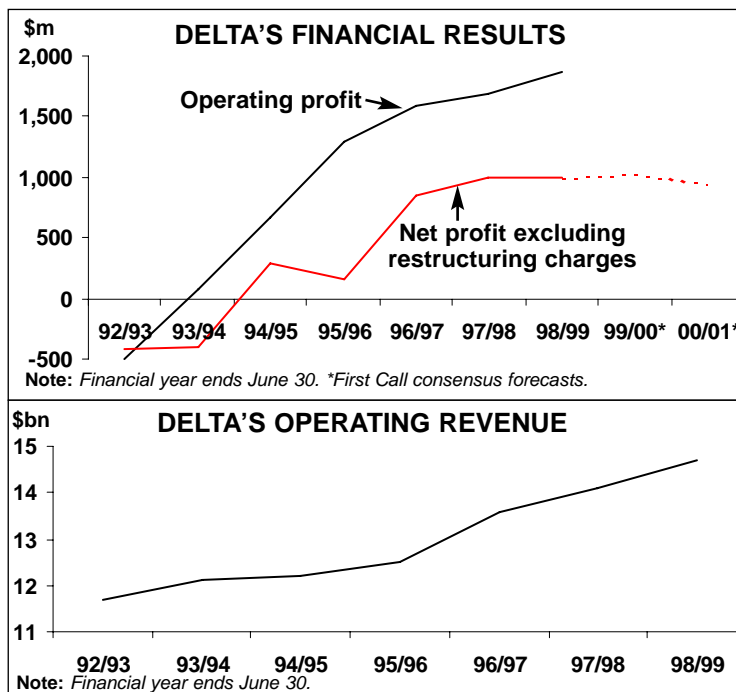
Regional jets are likely to be a major issue because of Delta's ambitious plans for its feeder partners. The current pilot contract is unusually liberal in that it places no limit on the number of RJs with 70 or fewer seats, but at the very least ALPA is likely to want the numbers linked to mainline growth.

Demands such as a voting board seat and changes to Delta Express pay rates are likely to be totally unacceptable to the company, which is otherwise committed to keeping its workers at or near the top industry compensation rates in return for superior productivity. The 777/767-400 deal and the next pilot contract will be horrendously costly to Delta, but that is probably inevitable in the present labour climate.

One important challenge for Delta is to try to deter further unionisation. It is the least unionised of the major carriers (only pilots and dispatchers), but there continues to be attempts to organise flight attendants, mechanics, ramp workers and ticket agents.

Mending customer service

Delta's current service quality drive began in late 1997, when plans were



unveiled to overhaul, modernise and streamline just about everything from lounges and gates to boarding procedures and information technology systems, and to speed up a programme to refurbish aircraft interiors.

The aircraft refurbishment programme covering the whole fleet was completed by the summer. Facilities at numerous airports have been renovated. New gate and boarding procedures have been introduced to simplify check-in. Delta has also invested \$314m in a new intercontinental premium business-class product (BusinessElite), which was phased in during the first half of this year. And it has forged partnerships with priceline.com and with iXL to expand access to customers through the Internet.

As a result, operational performance has improved dramatically. Delta moved up from last position in 1997 to second position in the year ended May 1999 in the DoT's domestic on-time performance rankings. It also came second or third in fewest mishandled bags and customer complaints and has even won a few awards.

But aspects of Delta's customer service still lag behind competitors' standards. These include an unacceptably high volume of involuntary denied boardings, which the airline now intends to remedy.

Otherwise, Delta is enthusiastically promoting its version of the industry-wide 12-point plan to tackle service problems.

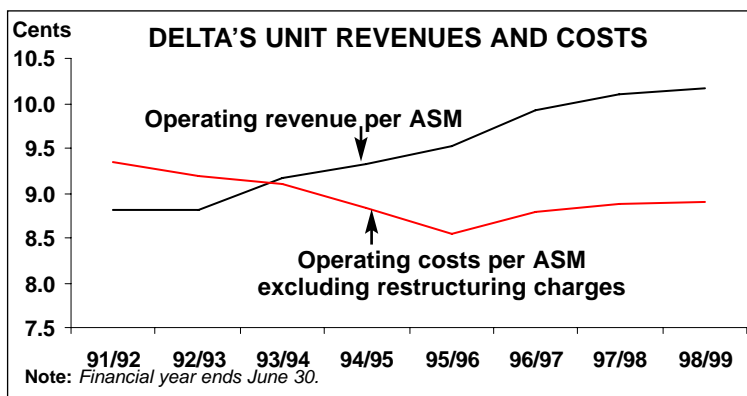
Domestic strategic moves

The inability to expand the April 1998 strategic alliance with United to include domestic codesharing has not really been a handicap - after all, American and US Airways have not gone ahead with code-sharing either (and appear reluctant to take up the matter with their pilot groups). Because of the large number of overlapping markets, Delta-United codesharing would have been frowned upon by the regulators.

Like American and US Airways, Delta and United have no doubt benefited from their FFP links. That said, Delta's market position is relatively strong because of its dominance at Atlanta, number one position at JFK and on the North Atlantic, growing presence in Latin America and Delta Express's operation on the East coast.

Delta's domestic strategy, like that of Continental and others, has focused on expanding and improving the economics of its main hubs: Atlanta, Cincinnati, Salt Lake City and New York (JFK). Last winter's schedule saw expanded service between Atlanta and key East coast cities, and this autumn the carrier is boosting Atlanta-West coast flights.

Delta Express has expanded at a steady pace in Northeast-Florida markets. With about 170 daily flights and a fleet of 37 737-200s, it is not a major profit generator. But its good operational reliability and customer appeal have helped Delta retain low-fare markets.



Delta Shuttle is now seeing service enhancements, seemingly in response to US Airways' recent moves. There are new early morning departures, a new direct Boston-Washington connection and improved menus, and Shuttle will start receiving a fleet of 16 new 737-800s next summer.

Delta has made several strategic moves recently that will further strengthen its domestic position. In June it completed the \$700m acquisition of its regional partner ASA, which now operates as a wholly-owned subsidiary. The move was spurred by Delta's dissatisfaction with ASA's service quality, and financial gains are expected from more efficient operations, market growth and higher aircraft utilisation.

In recent months ASA's schedules have been integrated more closely with Delta's at Atlanta and the carrier has introduced new CRJ services, which have freed larger Delta jets to long-haul markets. The plan is to substantially expand ASA's RJ fleet, though the carrier is also acquiring additional ATR 72s.

In another move marking a major venture into RJ operations, in early September Delta signed up Atlantic Coast (ACA) as a new regional partner in the Northeast. The 10-year agreement gives Delta exclusive use of 45 aircraft (25 Fairchild Dornier 328JETs and 20 CRJs) ACA has on firm order, plus access to possible future options, and the rights to determine routes and schedules. ACA has formed a separate Delta Connection unit (it also operates as United Express) and expects to begin Delta service next April.

The ACA deal received an enthusiastic response from analysts because of its profit-generating potential. Delta needed a strong feeder partner to boost its presence in the Northeast. Its current partner in that region, Business Express, was recently acquired by AMR and the Delta contract is due to expire in March. But the overall success of the RJ strategy will obviously depend on the stance adopted by the pilots in the current contract talks.

International struggles

Delta's aggressive foray into Latin America, which began with a batch of services to Central America and Venezuela in

April 1998 (after its limited previous operations to Mexico and Brazil) and was followed by Peru a year ago, appears to have been reasonably successful despite overcapacity and economic problems in that region. However, its Latin America operating profits fell by 33% to \$32m in 1998 as the load factor plummeted by 12 points to just 55%.

The carrier got burnt with the AeroPeru investment but has continued to build on its successful codeshare relationship with Aeromexico, as well as the more recent deals with Aerpostal, Transbrasil and Air Jamaica. It hopes to introduce service to Buenos Aires in September next year, following the recent signing of a new US-Argentina ASA, and is also seeking authority to Colombia, Montevideo, Uruguay and Chile.

Asia has been more of a struggle as Delta has not had much luck with its Asian partners. First it lost SIA and then ANA defected to the Star alliance. The promising codeshare co-operation with Korean had to be suspended in April pending a safety review of KAL's operations, leaving China Southern as the only codeshare partner.

Delta was able to enter the Atlanta-Tokyo market in June last year, followed by Portland-Fukuoka a few months later, but the latter has just been suspended due to financial losses. Operating profits from the Pacific division plummeted from \$38m in 1997 to just \$1.8m in 1998, but the carrier continues to serve Tokyo from Atlanta, Los Angeles and Portland and Nagoya from Portland.

The transatlantic market, where Delta is the largest US carrier, has continued to perform relatively well despite recent overcapacity and yield pressures. This year Delta has introduced new non-stop service from Atlanta to Athens, Barcelona, Istanbul and Rome and from New York to Dublin and Shannon - the latter meant the ending of its codeshare relationship with Aer Lingus.

Delta has benefited substantially from the rapid expansion of codesharing with Swissair, Sabena and Austrian since the former Atlantic Excellence alliance secured antitrust immunity in the US in June 1996.

Recently it pulled out of the Atlanta-Vienna market in favour of codesharing on that route and on services to Dubai and Zimbabwe with

Austrian. However, there may be some changes in the light of Delta's and Air France's decision to form a broader global alliance and Austrian's defection to Star. As a prelude to their new relationship, in March Delta and Air France substantially expanded their codesharing on US-France routes.

Global alliance prospects

Delta's exclusive long-term agreement with Air France was a major coup for Delta as Air France had also been courted by its other US codeshare partner Continental. The deal was extremely attractive because of Air France's stronghold at CDG and extensive presence in Europe, Middle East and Africa. It represented a major break for Delta, which has suffered many setbacks in its search for alliance partners and seemed in danger of being left out of the game altogether. However, the two will not be able to press for immediate antitrust authority as the US-France ASA will take five years to make the transition to full open skies.

Delta and Air France have pulled their codeshare partner Aeromexico into the grouping, while Korean Air has been mentioned as a likely Asian partner (assuming that it can successfully tackle its safety issues). But Delta must be concerned about secondary transatlantic relationships. Austrian's decision to join Star was a blow, and Swissair/Sabena will distance themselves further from Air France/Delta, though British Midland is a possible partner (see pages 2-3).

As a result of all the alliance turmoil, and in line with its strategy of selling non-core assets, Delta has now sold its 35.2m shares in SIA and repurchased SIA's holding of Delta stock. This formally ended the three-way alliance formed ten years ago as SIA and Swissair also recently disposed of their equity stakes in each other. Furthermore, Delta is likely to sell its holding in Swissair if the latter decides to join another global alliance. The SIA transactions will result in a \$140m pre-tax gain and \$75m net cash proceeds to Delta, adding to the \$115m pre-tax proceeds Delta received from the sale of some of its stock in priceline.com in the Internet venture's recent public offering.

By Heini Nuutinen

Airport privatisation: competition for management projects intensifies

In the last 12 months, there has been a lull in the frantic drive towards airport privatisation. Nevertheless, several smaller airports have passed into private hands and competition for management projects between the main airport groups has intensified.

Airports such as Frankfurt, Schiphol, Manchester and Copenhagen, and airport groups such as BAA, ADP, Aer Rianta and ADR are keen to acquire other airports for two main reasons. First, it lessens their exposure to any downturns in their own national economies. Second, with the exception of ADP, the immediate prospects for all the major airports are constrained by either terminal or runway capacity.

Where new airport infrastructure is required in the shape of terminals, runways and/or hotels, the attraction for a construction group such as Hochtief are obvious. For TBI, once a property developer but recently an airport purchaser, the attraction has been a faithful and enthusiastic stockmarket that has warmly embraced and supported its expansion into the airport sector. The stockmarkets' love affair with airports also explains the keenness of other companies to enter the airport fray.

Airports are generally perceived as having:

- Strong industry growth prospects;
- Limited competition because of high barriers to entry;
- Favourable regulatory regimes in order to encourage capital expenditure;
- Significant operational gearing; and
- For those airports that have been in public ownership, significant upside in terms of productivity and the expansion of commercial and property activities.

Governments wishing to privatise have four main options:

- Flotation via a public offering e.g. BAA and Copenhagen;
- Sale to a strategic investor e.g. Mexico;
- Sale to a financial investor e.g. the original Rome airport transaction; or

- Operating contracts and long-term leases e.g. Australia.

The most suitable option usually depends on whether the government or local authority wishes to retain a substantial ownership, the wishes of the airport management, and the financial robustness of the airport.

While the number of potential purchasers of airports continues to grow, supply remains thin. This has led, inevitably, to sharp rises in the prices paid for privatising airports. Investment bankers used to employ a rule of thumb that airports should be valued at six times EBITDA (earnings before interest, tax, depreciation and amortisation), but now the going rate is nearly twice this figure. For example, Copenhagen is reported to have paid eleven times EBITDA for the Southeast group of Mexican airports.

The Mexican deals

Mexico picked Copenhagen Airports to run the nine airports of the Southeast Group in December 1998, while Spain's Aeropuertos Espanoles y Navegación Aerea (AENA) won the second (Pacific) group in August. The multinational consortium led by local construction group Tribasa and including Copenhagen Airports, construction company Cintra, and GTM of France, paid \$116.5m for a 15% stake and a 15-year contract (with an underlying 50-year concession), with a further 5% option. Capital investment over the next five years is expected to amount to \$120m. The Southeast Group includes Mexico's second-busiest airport at Cancun with an annual throughput of 6m passengers.

AENA, partnered with Mexican company Angeles, and Dragados and Union Fenosa of Spain, paid \$261.6m for the 12 airports in the Pacific group, its first international success. The contract is otherwise identical to that of the Southeast Group.

Preparation work is nearing completion on the North-Central Group, which compris-

INTERNATIONAL AIRPORT PROJECTS

	ADP	ADR	AEN	AMS	BAA	CPH	FAG	HOC	MAN	NEX	SEA	TBI	YVR
Argentina											X		
Australia				X	X				X			X	
Bolivia												X	
Chile													X
Dominican Rep.													X
Germany							X	X					
Greece								X					
Indonesia	X												
Italy		X			X						X		
Mexico			X			X							
South Africa		X											
Sweden												X	
UK					X				X	X		X	
US				X	X					X		X	
Uruguay													X

Note: ADP = Aeroports de Paris; ADR = Aeroporti di Roma; AEN = Aeropuertos Espanoles y Navegacion Aerea; AMS = Amsterdam Airport Schiphol; CPH = Copenhagen Airport; FAG = Flughafen Frankfurt/Main; HOC = Hochtief; MAN = Manchester Airport; NEX = National Express; SEA = Societa Esercizi Aeroportuali (Milan); YVR = Vancouver Airport Services.

es 13 airports, with privatisation likely to be completed early in 2000. Mexico City comes next. Having been second-best in the bids for both Mexican groups privatised so far (as well as several others elsewhere), Aéroports de Paris (ADP) has gone one better in winning the privatisation of Angkasa Pura II, the Indonesian airports company responsible for five airports in Indonesia, including Jakarta's Soekarno-Hatta International.

In the UK the list of airport owners includes well known groups such as TBI, as well as property companies such as Peel Holdings (Liverpool), bus companies such as National Express (East Midlands and Bournemouth) and FirstBus (Bristol), and construction groups such as Wiggins (Manston).

UK developments: TBI and BAA

One UK company quietly set about moving into the airport business. The acquisition of Belfast International and Cardiff International, Skavsta near Stockholm and Orlando Sanford International in the US in the last four years was hardly noticed. But the sale of its \$300m property interests last June, followed by the acquisition of US airport operator Airport Group International (AGI), has moved TBI into the premier league among airport management companies, completing its transformation into a fully-fledged airport group.

TBI beat strong opposition for AGI, which is believed to have included Hochtief and BAA. Having so far concentrated on smaller regional airports which, says TBI's CEO Keith Brooks, have yielded excellent returns, it will be interesting to see if the stronger group will now start to scrap for the big prizes that will come up in the near future, such as Sydney and Mexico City.

The \$143m purchase of AGI, which was approved by shareholders in September, has given TBI interests in 29 airports in Australia, the UK, and North and South America. Among these are equity interests in London Luton Airport; Perth, Darwin, Alice Springs and Hobart, all in Australia; and in Cochabamba, La Paz and Santa Cruz de la Sierra in Bolivia.

Management contracts are held in another six, while a number of other services, such as ground handling and refuelling, are provided in 14 more airports in the United States. Earlier this year, AGI was selected as the preferred bidder for San José Airport in Costa Rica. TBI's most recent success has been in winning the management, operation and development contract for the domestic terminal at Orlando.

BAA has not been able to expand as rapidly as it would wish, as its shareholders want to see purchases made only at prices that are earnings-enhancing. BAA, despite an aggressive campaign to acquire non-UK airports, has so far added only a 15.1% stake in

the APAC consortium which owns 50 year leases for Melbourne and Launceston airports and 70% of the operating company for Naples airport, to its stable of seven UK airports.

BAA has had therefore to change its strategy accordingly. Its preference remains to both manage and own (alongside financial partners) large international airports. However BAA will also take on management contracts where its strength in retailing allows it potentially to extract more value from a concession to manage a terminal rather than might be the case with direct ownership but with a high entry price. This policy also allows it to participate in ventures in countries where it might be reluctant to have a financial exposure through share ownership such as in Africa and the Far East, or where only management contracts are on offer rather than ownership.

Thus BAA has continued to expand its portfolio, signing a strategic alliance with Airports of Mauritius (AML) to manage the island's Sir Seewoosagur Ramgoolam International Airport and its duty free shops. The management contract is for five years, with an option for a further five years.

More significantly, BAA has got a foot in the door in China, which is looking to private finance and foreign management expertise for its major airports. A joint venture between BAA Pacific (49%) and the China Airport Construction Corporation - known as Allied Airport Management - won a licence in May for the introduction of commercial management into airports with an annual throughput of at least 2m passengers. BAA will be seeking contracts of between 10 and 15 years and hopes to secure two airports by the end of 2000, with a possible four more to follow. China has 16 qualifying airports, and is building a major new facility at Guangzhou.

BAA is believed to be interested in the privatisation of Portugal's Aeroportos e Navegacao Aérea (ANA EP), plans for which have been delayed until at least next year, one of the sticking points being what to do with Lisbon. The construction of a second airport for the capital is still on the cards, but there is as yet no agreement on where to

build such an airport, while some within government prefer to expand the present airport to meet expected growth.

If the new airport is finally given the green light, BAA will face competition from two other consortia that are ready to bid for the financing, design, construction and operation of the proposed airport. Amsterdam, Aéroports de Paris (ADP) and Frankfurt Airport (FAG) will be involved.

The same companies are also likely to bid when a 51% stake will be offered in Aeroporti di Roma (ADR), which operates the two Rome airports of Leonardo da Vinci and Ciampino.

The 51% stake is expected to be valued at no less than US\$1.1bn. The bidders for the two Rome airports exemplify the diversity of companies that are interested in the airport sector. The following four groups are expected to be shortlisted;

- BAA with partners Banco di Roma and CIR (manufacturing group owned by the De Benedetti family);
- Hermes (luxury brands), Pirelli (tyres) and Benetton (fashion retailer);
- Gemina (financial holding company), McDonalds (fast food), Falck (an Italian energy and metal company, Impregilo (construction), and Italtpetroli (oil); and
- ABN Amro and Banca Popolare di Milano, Schiphol and Frankfurt airports.

Germany: the Hochtief/IVG battle

Germany has been in the news, but for all the wrong reasons. German construction giant Hochtief's aim of building airport management into the second pillar of its Dm6bn (\$534m) business received a severe setback in August, when a Brandenburg regional court ruled that its winning bid for Berlin Brandenburg Flughafen Holding (BBF) was null and void.

Earlier this year, it had all looked so promising when, in a tight head-to-head battle with another German consortium led by Bonn-based industrial group IVG and also including Vienna Airport, Hochtief had emerged the winner. The consortium, which included Hochtief, Frankfurt Airport (FAG) and ABB Airport Technologies, offered to

pay Dm635m (\$350m) for the shares of BBF. It also committed to an investment of DM6bn (\$3.3bn) to develop the former East German Schönefeld Airport into a single international airport for Germany's new capital.

The first phase alone would have involved an expenditure of Dm4.85bn (\$2.6bn) to increase the airport's capacity to 20m passengers by 2007. A second phase would have added a satellite terminal to bring passenger capacity to 30m by 2025. The deal also included the acquisition and operation of Berlin's other airports at Tegel and Tempelhof, both of which were due to be closed - Tempelhof in 2002 and Tegel in 2007 - although the latter needs to be expanded to 11m passenger capacity in the interim period.

When the European Commission concluded that the involvement of Hochtief in Düsseldorf and Frankfurt Airport in Berlin would not affect competition in Germany and the EU, work on the new Berlin Brandenburg International Airport seemed set fair for a start in 2003.

But IVG did not accept defeat lying down. It challenged the decision to award the contract to Hochtief and complained to the State of Brandenburg's contract supervisory committee that the Hochtief bid did not concur with technical requirements. But, more crucially, IVG pointed the finger at three people which, as well as being involved in reaching the decision to award the contract to Hochtief, at the same time were said to have held senior positions with members of the consortium. When the committee dismissed these objections, IVG took the matter to a higher authority and the regional court had no choice but to act the way it did. IVG has said it will match the Hochtief offer when both bid again, but the likely outcome is anyone's guess. As to the delay in the schedule, BBF says the planning application will be pushed through in December, with construction starting in 2003.

In the euphoria after the award, Hochtief's CEO Peter Keitel had been quick to point out that the Berlin airports would already bring in profits in 2000, and that serious consideration was being given to expand its airport portfolio by three or four more in the near future.

While he refused to name which airports are being targeted, it should be noted that the federal government wants to relinquish holdings in other airports, including Frankfurt, Hamburg, Cologne/Bonn and Munich. What effect the court ruling in Berlin may have on its chances, even if it wins the re-run with IVG, is difficult to predict, but the EC may be less inclined to look favourably at further Hochtief airport acquisitions in Germany.

YVRAS breakthrough

Finally, Vancouver Airport Services (YVRAS) has this year established itself as a player in the airport privatisation market, winning contracts in the Dominican Republic, Chile and Uruguay. As part of a consortium that also includes US services company Ogden Corporation, Italian construction group Impregilo SpA, and Operadora de Aeropuertos del Caribe (OPASA), formed by Dominican business interests, Vancouver will invest \$400m in four airports, in return for a 20-year concession.

The four airports to be privatised are Las Americas, serving the capital Santo Domingo, and the facilities at Puerto Plata, Samana and Barahona. More than half of the investment will be made in the first two years. The main attraction was the republic's growing popularity as a tourist destination, which has seen traffic surge over recent years.

In Chile, YVRAS is part of the SCL Terminal Aéreo de Santiago consortium, which has won a 15-year concession to manage the terminal and upgrade Arturo Marino Benitez International Airport in Santiago. Some \$220m are to be spent by May 2001. Other members of the consortium are local companies Agunsa and Sabco, and Spanish contractor Dragados-FCC.

The contract in Uruguay involves a 25-year contract to manage and develop Montevideo's Carrasco International Airport, beating ADP and AENA, the other operators qualified to bid. The consortium, which also includes Neutral SA, Tribasa and Akodike Supergas, is committed to invest up to \$180m on terminal and airside investments. This latest contract, signed in August, brings YVRAS's involvement to 14 airports in seven countries.

Engineering and maintenance: the outsourcing question

In Engineering and Maintenance (E&M) management, there are multiple questions to consider. What E&M activities should be outsourced, if any? Should existing E&M activity be a profit centre, a subsidiary or just sold off? On what basis should E&M suppliers be selected? How can the maintenance contract ensure performance and service standards (for both in-house and external supply)? What performance standards should be measured and incentivised, and how?

In this article *Aviation Strategy* reviews the question of outsourcing, and in upcoming issues we will look at organisation and contracts, then at supplier selection and performance measurement.

The first observation is that there is no one, global right answer. Actual airline practices show a vast number of approaches, adopting different models for some or all of their maintenance activity (see table below).

Key factors

There are four main factors that impact the ultimate outsourcing decision for an airline:

1. The start-point. Start-up airlines with no resources operate in a very different environment from established carriers which have been doing maintenance for many years, and which frequently have a role as an important national employer with strong union representation.

The other relevant start-point is the extent to which E&M is genuinely a source of advantage to the airline. For example, for Lufthansa, the quality of its E&M has created - in the customer's view - with a "halo" effect of reliability and safety. However, its capability also offers hard cost advantages - e.g. those derived from build-quality on engine overhaul.

2. Competitive third-party market. Many airlines developed in-house capability at a time when there was no alternative available. Today, in virtually all areas of E&M, there is a viable and contested third-party market.

In engine and component support, the manufacturers (OEMs) have recognised after-market support as a source of long-term, and higher, margins, and have entered the market vigorously. With their financial muscle and global reach, companies like GE and AlliedSignal have successfully established a strong market presence. Large airline third-party shops offer size, operating experience, incremental pricing and global access. Independent suppliers still exist but face tough challenges from competitors with significant advantages.

In heavy airframe maintenance, the major OEMs do not today participate as actively, though Boeing has considered the idea. The major players are again the airline third-party shops and a few notable independents who have gained the scale and business base to succeed (e.g. Tramco, FLS Aerospace).

The main line-maintenance decision is what to do at the main base(s). Assuming that most airline hubs will be at reasonably sized airports, then it is likely that a third-party alternative exists. If not, then line capability has to be established. Down-route, line-maintenance cover is often outsourced.

3. Economies of scale. Economies of scale do exist in E&M. Heavy airframe maintenance is labour and capital (hangar, tooling) intensive. Engine and component support are very capital intensive, with the former also requiring high-tech capabilities. Scale can also offer benefits in line-maintenance due to its 24-hour nature, shift systems, minimum staffing requirements and peaks and troughs in activity associated with banks of aircraft movements.

Where is the cut-over point at which it makes sense to develop in-house capabilities? Clearly the maths varies by carrier and region, but a common view is that a fleet of over 50 aircraft or more than 150 engines is normally required to justify in-house heavy maintenance capability. Airlines below this threshold should consider either joining

E&M ACTIVITIES & POSSIBLE MODELS

Activity	Models
Heavy airframe maintenance	Cost Centre
Component O&R	Profit Centre
Engine overhaul	Subsidiary
Line-maintenance	Joint Venture
Technical management	Third-party
All E&M	

with others to create a heavy maintenance operation of the necessary scale or outsourcing maintenance to a large cost-effective third-party provider.

4. Airline philosophy and objectives. Examples exist where airlines of a similar nature (size of fleet, operation, location, market) adopt different organisational approaches. Then it comes down to the airline strategy, the individual character and background of the decision-makers, particularly the Technical Director, and how much control the airline's management wish to exert over the E&M activities that directly impact the airline.

The most contentious debate is always over maintenance control and line-maintenance. Performance in these areas is so critical to technical despatch reliability and operational integrity that an in-house model is often adopted. However, if the airline has an outsourcing philosophy and believes in creating true accountability for performance, then these central activities should be part of the outsourced package.

In or out?

The main arguments for having each activity in-house or outsourced are straightforward. Ultimately however, the decision depends on the specific airline and how the factors given above apply.

Heavy airframe maintenance requires large investment in hangars, manpower and tooling. The main decision factor should be size and few airlines have the scale to justify the investment. Despite this, many do - for reasons that are not economic. In some countries, aircraft maintenance is seen as an important source of employment, technology, skill development and even national pride. The rationale case is that the third-party market is very competitive; aircraft are mobile and if necessary can move to regions where competition exists, and significant scale is necessary to generate the unit costs that outsourcing may provide. The airline has to recognise that even if local labour costs are low (and labour generally represents over 60% of the cost), total cost in terms of turn-time and turn-time reliability must be taken into account.

Component support is management and capital intensive, and again size should be the most important factor. Third-party suppliers who already support large fleets can offer significant economies of scale when it comes to spares provisioning for growth or new aircraft introduction, and when purchasing O&R. Outsourcing the has-

le of managing the thousands of different parts required seems a very logical option for small E&M management teams. As a result, outsourcing, flying hour rate contracts and consignment stocks are increasingly common.

Engine overhaul outsourcing decisions tend to be clearer cut because of the costs involved. Just the test cell can put you back \$20m. And despite the significant barriers to entry, a contested third-party market does exist (in most engine types though not all) and engines can travel.

As mentioned, line-maintenance is not a clear-cut decision and the most influential factor is often the background, philosophy and experience of the Technical Director. The most important argument for in-house capability is the function's criticality to operational reliability. Since this is the most visible performance measure that the Technical Director will be made accountable for, on a daily basis, then line-maintenance often ends up in-house.

The strongest case for outsourcing this activity comes when a third-party supplier with scale exists at the operating base. Then the following should be on offer: lower unit costs, a hangar for A checks/casualties/overnight work, and better on-site spares access. And with today's severe shortage of licensed engineers, the supplier would have appropriate resources already trained and in place. But the service provided has to be excellent. The cost of excessive technical delays will rapidly outweigh any unit cost advantage gained.

Technical management is the "intelligence" centre of E&M activity. It is essential for: evaluating new aircraft; developing modifications protecting the asset value of the fleet; tailoring maintenance programmes to the airline's flight operations, and building reliability analysis and on-condition monitoring into work package design to increase aircraft availability and reduce material/labour costs. To conduct all this work in-house requires investment in and management of a maintenance IT system. In this case, the "start-point" is probably the most influential factor. An airline with a system and the staff in place is unlikely to suddenly outsource this management activity.

Outsourcing the entire E&M activity would be a radical decision for airlines with some or most of the above activities already in-house. An organisation migration path from profit centre to subsidiary to true third-party would most likely be followed. For an airline that is new or small, then outsourcing is a feasible and logical option.

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Aviation Strategy

Macro-trends

EUROPEAN SCHEDULED TRAFFIC

	Intra-Europe			North Atlantic			Europe-Far East			Total long-haul			Total international		
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %
1991	114.8	65.2	56.8	120.9	84.3	69.7	80.0	53.1	66.4	267.6	182.0	68.0	397.8	257.9	64.7
1992	129.6	73.5	56.7	134.5	95.0	70.6	89.4	61.6	68.9	296.8	207.1	69.8	445.8	293.4	65.8
1993	137.8	79.8	57.9	145.1	102.0	70.3	96.3	68.1	70.7	319.1	223.7	70.1	479.7	318.0	66.3
1994	144.7	87.7	60.6	150.3	108.8	72.4	102.8	76.1	74.0	334.0	243.6	72.9	503.7	346.7	68.8
1995	154.8	94.9	61.3	154.1	117.6	76.3	111.1	81.1	73.0	362.6	269.5	74.3	532.8	373.7	70.1
1996	165.1	100.8	61.1	163.9	126.4	77.1	121.1	88.8	73.3	391.9	292.8	74.7	583.5	410.9	70.4
1997	174.8	110.9	63.4	176.5	138.2	78.3	130.4	96.9	74.3	419.0	320.5	76.5	621.9	450.2	72.4
1998	188.3	120.3	63.9	194.2	149.7	77.1	135.4	100.6	74.3	453.6	344.2	75.9	673.2	484.8	72.0
Jul 99	17.9	12.3	68.7	20.6	16.9	82.0	11.5	9.2	80.2	44.3	35.5	80.0	65.4	50.0	76.5
Ann. chng	4.5%	4.3%	-0.2	11.2%	10.8%	-0.3	-1.5%	3.7%	4.1	7.7%	8.5%	0.5	7.0%	7.7%	0.5
Jan-Jul 99	114.8	71.4	62.2	124.0	94.5	76.2	77.9	58.6	75.6	282.4	210.7	74.6	417.2	295.2	70.8
Ann. chng	6.6%	4.5%	-1.3	13.7%	12.3%	-0.9	-0.6%	2.7%	2.5	9.5%	7.8%	-0.7	8.8%	7.8%	-0.7

Source: AEA.

US MAJORS' SCHEDULED TRAFFIC

	Domestic			North Atlantic			Pacific			Latin America			Total international		
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %
1991	835.1	512.7	61.4	108.0	75.2	69.6	117.0	78.5	67.1	44.3	27.4	61.8	269.2	181.0	67.2
1992	857.8	536.9	62.6	134.4	92.4	68.7	123.1	85.0	69.0	48.0	27.4	57.0	305.4	204.7	67.0
1993	867.7	538.5	62.1	140.3	97.0	69.2	112.5	79.7	70.8	55.8	32.5	58.2	308.7	209.2	67.8
1994	886.9	575.6	64.9	136.1	99.5	73.0	107.3	78.2	72.9	56.8	35.2	62.0	300.3	212.9	70.9
1995	900.4	591.4	65.7	130.4	98.5	75.6	114.3	83.7	73.2	62.1	39.1	63.0	306.7	221.3	72.1
1996	925.7	634.4	68.5	132.6	101.9	76.8	118.0	89.2	75.6	66.1	42.3	64.0	316.7	233.3	73.7
1997	953.3	663.7	69.6	138.1	108.9	78.9	122.0	91.2	74.7	71.3	46.4	65.1	331.2	246.5	74.4
1998	961.0	679.1	70.7	150.3	118.5	78.8	112.1	81.6	72.8	84.0	52.3	62.3	346.4	252.4	72.9
July 99	88.6	67.8	76.6										32.5	25.8	79.6
Ann. chng	5.6%	5.6%	0.0										2.3%	7.0%	3.7
Jan-Jul 99	578.7	411.4	71.1										206.4	152.8	74.0
Ann. chng	3.9%	3.8%	-0.1										2.2%	3.7%	1.0

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

ICAO WORLD TRAFFIC AND ESG FORECAST

	Domestic			International			Total			Domestic growth rate		International growth rate		Total growth rate	
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK %	RPK %	ASK %	RPK %	ASK %	RPK %
1992	1,305	837	64.2	1,711	1,151	67.3	3,016	1,987	65.9	3.0	4.6	15.1	15.3	9.5	10.5
1993	1,349	855	63.3	1,785	1,205	67.5	3,135	2,060	65.7	3.4	2.0	4.4	4.8	3.9	3.6
1994	1,410	922	65.3	1,909	1,320	69.1	3,318	2,240	67.5	4.6	7.9	6.9	9.4	5.9	8.8
1995	1,468	970	66.1	2,070	1,444	69.8	3,537	2,414	68.3	4.1	5.4	8.5	9.4	6.6	7.8
1996	1,540	1,043	67.7	2,211	1,559	70.5	3,751	2,602	70.4	4.9	7.4	8.8	10.0	7.0	8.8
1997	1,584	1,089	68.8	2,346	1,672	71.3	3,930	2,763	70.3	2.9	4.5	6.1	7.2	4.8	6.1
1998	1,638	1,147	70.0	2,428	1,709	70.4	4,067	2,856	70.3	3.4	5.2	3.5	2.2	3.4	3.4
*1999	1,733	1,196	69.0	2,557	1,814	71.0	4,290	3,009	70.2	5.9	4.3	5.3	6.1	5.5	5.4
*2000	1,810	1,244	68.7	2,715	1,922	70.8	4,525	3,165	70.0	4.4	4.0	6.2	5.9	5.5	5.2
*2001	1,868	1,273	68.1	2,837	1,992	70.2	4,706	3,265	69.4	3.3	2.3	4.5	3.7	4.0	3.2
*2002	1,923	1,291	67.1	2,961	2,049	69.2	4,883	3,339	68.4	2.9	1.4	4.3	2.8	3.8	2.3
*2003	1,973	1,353	68.6	3,093	2,187	70.7	5,066	3,540	69.9	2.6	4.8	4.5	6.7	3.7	6.0

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

DEMAND TRENDS (1990=100)

	Real GDP					Real exports					Real imports				
	US	UK	Germany	France	Japan	US	UK	Germany	France	Japan	US	UK	Germany	France	Japan
1991	99	98	101	101	104	106	99	112	104	105	99	95	113	103	97
1992	102	98	102	102	105	113	103	112	109	110	107	101	115	104	96
1993	105	100	100	101	105	117	107	106	109	112	117	104	108	101	96
1994	109	103	103	104	106	126	117	115	115	117	131	110	117	107	104
1995	111	106	105	106	107	137	126	122	123	123	141	115	124	113	119
1996	114	108	107	107	111	152	135	128	128	126	155	124	127	116	132
1997	118	112	110	109	112	172	146	142	142	138	177	135	136	123	132
1998	122	115	113	112	109	173	150	152	150	135	196	144	147	133	121
*1999	124	116	115	115	109	179	154	159	156	140	211	150	156	141	124

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

Aviation Strategy

Macro-trends

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 6 month Euro-\$	
	US	UK	Germany	France	Japan	UK	Germ.	France	Switz.	Euro**	Japan		
1990	100	100	100	100	100	1990	0.563	1.616	5.446	1.389	0.788	144.8	8.27%
1991	104	106	104	103	103	1991	0.567	1.659	5.641	1.434	0.809	134.5	5.91%
1992	107	107	109	106	105	1992	0.570	1.562	5.294	1.406	0.773	126.7	3.84%
1993	111	109	114	108	106	1993	0.666	1.653	5.662	1.477	0.854	111.2	3.36%
1994	113	109	117	110	107	1994	0.653	1.623	5.552	1.367	0.843	102.2	5.06%
1995	117	112	119	112	107	1995	0.634	1.433	4.991	1.182	0.765	94.1	6.12%
1996	120	114	121	113	107	1996	0.641	1.505	5.116	1.236	0.788	108.8	4.48%
1997	122	117	123	114	108	1997	0.611	1.734	5.836	1.451	0.884	121.1	5.85%
1998	123	120	124	115	109	1998	0.603	1.759	5.898	1.450	0.896	130.8	5.51%***
*1999	125	122	126	116	108	Sep 1999	0.606	1.863	6.247	1.525	0.952	106.2	5.94%***

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

WIDEBODY LEASE RATES

Model	Age	Rental (\$m)	Model	Age	Rental (\$m)	Model	Age	Rental (\$m)
747-100B	1969-76	90,000	L1011-1	1971-81	100,000		1979-81	120,000
747-200B	1971-75	150,000	L1011-200	1975-81	120,000	A300B4-200	1975-79	115,000
	1976-80	255,000	L1011-500	1978-83	145,000		1980-84	160,000
	1981-87	365,000	DC10-10	1970-78	105,000	A300-600	1985-92	330,000
747-300	1983-89	440,000	DC10-30	1977-82	280,000	A300-600R	1987-90	345,000
747-400	1989-93	750,000	DC-10-40	1972-76	105,000		1992-97	430,000
	1994-99	965,000	MD-11P	1990-93	620,000	A310-200	1982-89	210,000
767-200	1981-90	250,000		1994-99	720,000	A310-300	1985-89	270,000
767-200ER	1985-92	340,000	A300B2-100	1973-77	75,000		1990-97	370,000
767-300	1986-90	380,000		1978-81	85,000	A330-200	1998-99	725,000
767-300ER	1988-92	585,000	A300B2-200	1976-80	85,000	A330-300	1994-99	730,000
	1993-99	675,000		1981-82	95,000	A340-200	1993-99	625,000
777-200B	1995-99	835,000	A300B4-100	1974-78	95,000	A340-300	1993-99	785,000

Source: Aircraft Value Journal, Sep/Oct 1999.

JET AND TURBOPROP ORDERS

	Date	Buyer	Order	Price	Delivery	Other information/engines
ATR	-	-	-	-	-	-
Airbus	Sep 20	GATX Flightlease	12 A318s, 10 A320s, 10A321s, 6 A330s			
	Sep 17	Lufthansa	8 A340-300s, 3 A320s		01+	+ 6 options for A340-300s
BAe	-	-	-	-	-	-
Boeing	-	-	-	-	-	-
Bombardier	Sep 28	Maersk Air	1 CRJ200LR			From option
	Sep 28	Adria Airways	1 CRJ200			
Embraer	-	-	-	-	-	-
Fairchild Dornier	Sep 9	Atlantic Coast AL	25 328JETs	\$324m	2Q00+	+ 30 options for 328JET and/or 428JETs

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

Aviation Strategy

Micro-trends

	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	%	
American*														
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	4,229	3,802	427	290	62,405.4	41,846.6	67.1	6.78	6.09	19,267	9,207.0	4,889.4	53.1	87,569
Apr-Jun 98	4,497	3,889	608	409	64,471.8	46,075.9	71.5	6.98	6.03	20,901	9,512.3	5,317.6	55.9	87,076
Jul-Sep 98	4,583	3,958	625	433	65,920.1	48,093.9	73.0	6.95	6.00	21,457	9,739.3	5,466.1	56.1	89,078
Oct-Dec 98	4,152	3,857	295	182	64,317.3	43,811.6	68.1	6.46	6.00	19,805	9,526.7	5,060.1	53.1	90,460
Jan-Mar 99	3,991	3,954	37	158	62,624.3	41,835.4	66.8	6.37	6.31					
Apr-Jun 99	4,528	4,120	408	268	67,313.8	47,945.9	71.2	6.73	6.12					
America West														
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	1,228.9	733.0	59.7	11,645
Jul-Sep 98	499	453	46	22	9,884.3	7,108.3	71.9	5.05	4.58	4,665	1,240.4	746.9	60.2	11,600
Oct-Dec 98	507	470	37	20	10,037.2	6,491.9	64.7	5.05	4.68	4,335	1,261.2	688.1	54.6	11,687
Jan-Mar 99	520	469	51	26	10,135.4	6,485.5	64.0	5.13	4.63	4,263				
Apr-Jun 99	570	494	76	42	10,446.0	7,204.8	69.0	5.46	4.73	4,724				
Continental														
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	3,629.6	2,399.3	66.1	39,170
Jul-Sep 98	2,116	1,973	143	73	31,609.9	24,049.4	76.1	6.69	6.24	11,655	3,801.8	2,542.9	66.9	40,082
Oct-Dec 98	1,945	1,817	128	66	30,557.4	21,273.3	69.6	6.37	5.95	10,637	3,664.5	2,339.0	63.8	41,118
Jan-Mar 99	2,056	1,896	160	84	30,938.8	22,107.0	71.5	6.65	6.13	12,174				
Apr-Jun 99	2,198	1,942	256	137	32,448.3	24,009.1	74.0	6.77	5.98	11,493				
Delta														
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	3,390	3,053	337	195	54,782.2	37,619.0	68.7	6.19	5.57	24,572	7,766.6	4,448.9	57.3	71,962
Apr-Jun 98	3,761	3,167	594	362	57,175.5	43,502.6	76.1	6.58	5.54	27,536	8,189.9	5,049.5	61.7	74,116
Jul-Sep 98	3,802	3,250	552	327	59,017.9	45,242.3	76.7	6.44	5.51	27,575	8,486.8	5,196.9	61.2	75,722
Oct-Dec 98	3,448	3,128	320	194	57,810.9	39,947.7	69.1	5.96	5.41	25,531	8,244.1	4,699.3	57.0	76,649
Jan-Mar 99	3,504	3,148	356	216	56,050.3	39,163.9	69.9	6.25	5.62					
Apr-Jun 99	3,957	3,315	642	364	57,957.3	43,422.1	74.9	6.83	5.72					
Northwest														
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	2,273	156	71	38,260.1	27,038.2	70.7	6.35	5.94	12,704	6,052.7	3,513.4	58.0	49,776
Apr-Jun 98	2,475	2,355	120	49	38,332.7	29,533.7	77.0	6.46	6.14	13,676	6,102.8	3,745.5	61.4	51,284
Jul-Sep 98	1,928	2,404	-276	-224	32,406.3	24,295.8	75.0	5.95	6.80	11,148	5,107.4	3,058.6	59.9	50,654
Oct-Dec 98	2,212	2,404	-192	-181	37,947.0	26,534.3	69.9	5.83	6.34	12,962	6,125.2	3,588.9	58.6	50,503
Jan-Mar 99	2,281	2,295	-14	-29	37,041.3	26,271.8	70.9	6.16	6.20					
Apr-Jun 99	2,597	2,333	264	120	40,541.5	30,900.2	76.2	6.41	5.75					
Southwest														
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	2,394.0	1,378.0	57.6	24,807
Jul-Sep 98	1,095	891	204	130	19,762.1	13,620.3	68.9	5.54	4.51	13,681	2,519.0	1,420.4	56.4	25,428
Oct-Dec 98	1,047	888	159	100	19,763.0	12,603.4	63.8	5.30	4.49	13,291	2,504.1	1,317.4	52.6	26,296
Jan-Mar 99	1,076	909	167	96	19,944.0	12,949.2	64.9	5.40	4.56	12,934				
Apr-Jun 99	1,220	966	254	158	20,836.9	15,241.7	73.1	5.85	4.64	14,817				
TWA														
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	6,417	1,979.0	1,186.2	59.9	22,147
Jul-Sep 98	863	839	24	-5	14,293.8	10,531.3	73.7	6.04	5.87	6,273	1,999.7	1,150.0	57.5	21,848
Oct-Dec 98	747	813	-66	-79	13,452.4	8,731.6	64.9	5.55	6.04	5,574	1,863.7	982.8	52.7	21,321
Jan-Mar 99	764	802	-38	-22	13,352.4	9,205.2	68.9	5.72	6.01					
Apr-Jun 99	866	848	18	-6	14,274.4	11,130.9	78.0	6.07	5.94					
United														
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	19,316	9,987.5	5,589.7	56.0	92,581
Apr-Jun 98	4,442	3,972	470	282	69,101.7	50,152.2	72.6	6.43	5.75	21,935	10,453.0	6,202.6	59.3	94,064
Jul-Sep 98	4,783	4,088	695	425	73,913.5	56,283.7	76.1	6.47	5.53	23,933	11,255.3	6,847.4	60.8	94,270
Oct-Dec 98	4,281	4,090	191	54	70,620.9	49,484.4	70.1	6.06	5.79	21,616	10,774.4	6,182.8	57.4	94,903
Jan-Mar 99	4,160	4,014	146	78	67,994.5	46,899.8	69.0	6.12	5.90					
Apr-Jun 99	4,541	4,108	433	669	71,573.6	50,198.9	70.1	6.34	5.74					
US Airways														
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	15,302	3,107.6	1,895.9	61.0	40,846
Jul-Sep 98	2,208	1,938	270	142	23,267.3	17,639.5	75.8	9.49	8.33	15,290	3,166.1	1,898.2	60.0	40,660
Oct-Dec 98	2,121	1,943	178	104	23,318.8	16,112.3	69.1	9.10	8.33	14,202	3,171.1	1,754.5	55.3	40,664
Jan-Mar 99	2,072	1,983	89	46	22,745.8	15,405.8	67.7	9.11	8.72					
Apr-Jun 99	2,286	2,007	279	317	23,891.7	17,557.5	73.5	9.57	8.40					
ANA														
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	3,459	3,545	-86	-68	40,446.9	26,187.7	64.7	8.55	8.76	20,102				
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	3,399	3,355	44	73	42,415.9	27,404.4	64.6	8.01	7.91	21,449				
Oct-Dec 98	SIX MONTH FIGURES													
Jan-Mar 99	SIX MONTH FIGURES													
Apr-Jun 99	SIX MONTH FIGURES													
Cathay Pacific														
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	SIX MONTH FIGURES													
Oct-Dec 98	1,769	1,713	56	-45	31,367.0	21,173.0	67.5	5.64	5.46	5,649.0	3,847.0	68.1		
Jan-Mar 99	SIX MONTH FIGURES													
Apr-Jun 99	SIX MONTH FIGURES													
JAL														
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	SIX MONTH FIGURES													
Jul-Sep 98	4,463	4,262	201	133	58,439.5	40,413.9	69.2</							

Aviation Strategy

Micro-trends

	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														
Oct-Dec 97	4,569	4,184	385	-424	53,782.5	38,185.6	71.0	8.50	7.78	23,740		8,428.4		17,439
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	TWELVE MONTH FIGURES													
Oct-Dec 98	3,283	3,064	219	212	58,246.4	40,190.3	69.0	5.64	5.26	25,557		9,484.0		17,050
Jan-Mar 99														
Apr-Jun 99														
Malaysian														
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	SIX MONTH FIGURES													
Jul-Sep 98	860	958	-98	-11			57.2							
Oct-Dec 98	SIX MONTH FIGURES													
Jan-Mar 99														
Apr-Jun 99														
Singapore														
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	
Oct-Dec 98	SIX MONTH FIGURES													
Jan-Mar 99	2,421	2,130	291	341	41,725.5	30,843.7	73.9	5.80	5.10	6,537	7,958.5	5,540.3	69.6	
Apr-Jun 99														
Thai Airways														
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	-121	12,084.0	7,963.0	65.9	4.84	4.82		1,700.0			
Jul-Sep 98	629	584	45	176	12,118.0	8,769.0	72.4	5.19	4.82					
Oct-Dec 98	727	647	80	170	12,599.0	9,195.0	73.0	5.77	5.14					
Jan-Mar 99														
Apr-Jun 99														
Air France														
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	5,126	5,079	47	18										
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	5,088	4,894	194	228	49,724.0	38,070.0	76.6	10.23	9.84					
Oct-Dec 98	SIX MONTH FIGURES													
Jan-Mar 99	5,550	5,552	-2	56	51,394.0	38,242.0	74.4	10.80	10.80					
Apr-Jun 99														
Alitalia														
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	TWELVE MONTH FIGURES													
Oct-Dec 98	5,152	4,432	720	235	51,638.4	35,427.2	68.8	9.98	6.86	24,103				18,825
Jan-Mar 99														
Apr-Jun 99														
BA														
Oct-Dec 97	3,580	3,436	144	110	40,059.0	26,929.0	67.2	8.94	8.58	9,837	5,618.0	3,791.0	67.5	61,144
Jan-Mar 98	3,335	3,210	125	119	39,256.0	26,476.0	67.4	8.50	8.18	9,311	5,485.0	3,642.0	66.4	60,770
Apr-Jun 98	3,783	3,497	286	217	44,030.0	31,135.0	70.7	8.59	7.94	11,409	6,174.0	4,157.0	67.3	62,938
Jul-Sep 98	4,034	3,601	433	357	46,792.0	35,543.0	76.0	8.62	7.70	12,608	6,533.0	4,630.0	70.9	64,106
Oct-Dec 98	3,585	3,431	154	-114	44,454.0	29,736.0	66.9	8.06	7.72	10,747	6,277.0	4,111.0	65.5	64,608
Jan-Mar 99	3,343	3,481	-138	-119	43,544.0	29,537.8	67.8	7.68	7.99	10,285	6,130.0	3,933.0	64.2	64,606
Apr-Jun 99	3,527	3,378	149	302	45,813.0	32,032.0	69.9	7.70	7.37	11,733	6,437.0	4,215.0	65.5	65,179
Iberia														
Oct-Dec 97	4,168	3,900	268	96	37,797.6	27,679.2	73.2	11.03	10.32	15,432		3,313.0		21,525
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	TWELVE MONTH FIGURES													
Oct-Dec 98	4,451	4,100	351	356	45,041.6	32,520.0	72.2	9.88	9.10	21,753		3,740.0		22,065
Jan-Mar 99														
Apr-Jun 99														
KLM														
Oct-Dec 97	1,630	1,570	60	23	18,096.0	13,555.0	74.9	9.01	8.68		3,114.0	2,414.0	77.5	35,092
Jan-Mar 98	1,538	1,568	-30	528	17,595.0	13,240.0	75.2	8.74	8.91		2,995.0	2,259.0	75.4	33,227
Apr-Jun 98	1,702	1,572	130	105	18,600.0	14,290.0	76.8	9.15	8.45		3,177.0	2,365.0	74.4	35,666
Jul-Sep 98	1,865	1,675	190	121	19,363.0	15,984.0	82.6	9.63	8.65		3,359.0	2,583.0	76.9	33,586
Oct-Dec 98	1,673	1,661	12	-15	18,476.0	13,767.0	74.5	9.05	8.99		3,214.0	2,415.0	75.1	33,761
Jan-Mar 99	1,550	1,670	-120	-45	17,716.0	13,294.0	75.0	8.75	9.43		3,088.0	2,284.0	74.0	33,892
Apr-Jun 99	1,626	1,547	79	37	18,778.0	14,302.0	76.2	8.66	8.24		3,253.0	2,427.0	74.6	34,980
Lufthansa***														
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	23,742.0	16,236.0	68.4	12.22	12.05	8,778	4,618.0	3,171.0	68.7	54,849
Apr-Jun 98	3,507	3,081	426	289	26,132.0	19,489.0	74.6	13.42	11.79	10,631	5,078.0	3,575.0	70.4	54,556
Jul-Sep 98	3,528	3,167	361	198	26,929.0	20,681.0	76.8	13.10	11.76	11,198	5,231.0	3,748.0	71.6	54,695
Oct-Dec 98	2,929	2,106	823	96	25,530.0	18,259.0	71.5	11.47	8.25	9,819	5,204.0	3,676.0	70.6	55,368
Jan-Mar 99	3,301	3,210	91	64	25,445.0	17,942.0	70.5	12.97	12.62	9,658	4,972.0	3,435.0	69.1	56,420
Apr-Jun 99	3,322	3,012	310	97	30,500.0	22,279.0	73.0	10.89	9.86	11,444	5,626.0	3,993.0	71.0	53,854
SAS														
Oct-Dec 97	1,334	1,204	130	63*	7,771.0	4,940.0	63.6	17.17	15.49	5,211				28,716
Jan-Mar 98	1,184	1,077	106	76*	7,761.0	4,628.0	59.6	15.25	13.88	4,863				24,722
Apr-Jun 98	1,323	1,149	174	107*	7,546.0	5,260.0	69.7	17.53	15.23	5,449				25,174
Jul-Sep 98	1,283	1,152	131	127*	8,283.0	5,843.0	70.5	15.49	13.91	5,714				26,553
Oct-Dec 98	1,368	1,266	102	46*	8,116.0	5,089.0	62.7	16.86	15.60	5,431				27,071
Jan-Mar 99	1,203	1,227	-24	-3*	8,062.0	4,713.0	58.5	14.92	15.22	5,017				27,110
Apr-Jun 99	1,357	1,294	63	60*	8,466.0	5,571.0	65.8	16.03	15.28	5,850				27,706
Swissair**														
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	6,922				9,756
Jul-Sep 98	SIX MONTH FIGURES													
Oct-Dec 98	2,187	2,070	117	165	20,476.8	15,391.3	75.2	10.68	10.11	5,277				10,396
Jan-Mar 99	SIX MONTH FIGURES													
Apr-Jun 99	1,932	1,877	55	57	23,411.0	16,130.0	68.9	8.25	8.02	7,784				10,715

Note: Figures may not add up due to rounding. 1 ASM = 1.6093 ASK. *Pre-tax. **SAirLines' figures apart from net profit, which is SAirGroup. ***Excludes Condor from 1998 onwards. 4Q+ data are on IAS basis.

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