

## Fuelling anxiety

With the crude oil price up to around \$27/barrel and the wholesale price of jet kerosene touching 80 cents a gallon, there are signs of minor panic in the aviation industry. Don Carty, CEO of American, commented at the end of January: "I'm concerned not just for our industry ...I'm concerned for the whole economy".

The recent price rises have reawakened memories of the bad old days when OPEC, at the beginning of the 70s and again in the early 80s, plunged the world into severe recessions after hiking oil prices. However, OPEC is a much weaker and less cohesive organisation than it used to be, and has presided over a halving in the oil price during 1980-99. The recent surge in spot prices is going to be very difficult to sustain because sooner or later (probably sooner) one of the producers will be tempted, or forced by its financial position, to break its quota. Then the oil price will again reflect the fundamental over-supply of the commodity.

That, at least, is *Aviation Strategy's* reading of the situation. But if we're wrong, what will be the effect on demand? The OECD, having forecast GDP growth in 2000 based on \$17/barrel, has done a sensitivity analysis assuming \$27/barrel. The results are: the US economy would fall from 3.1% growth to 2.9%, the EU from 2.8% to 2.6%, and Japan from 1.4% to 1.0%. The main threat would appear to be to Japan's incipient recovery.

The impact on airline costs is more immediate and tangible, and has caused howls of anguish from the US carriers whose fourth quarter results disappointed. Interestingly, the two most successful airlines in the quarter were Delta (very heavily hedged) and Southwest (despite not having hedged at all).

The response of the US majors, led by Continental, has been to impose a fuel surcharge of \$20 or so for most domestic trips. There is a risk here of a consumer backlash - some passenger groups see these surcharges as a sneaky way of pushing up fares permanently. They also wonder about whether they received the true benefits of low jet fuel prices in 1998 and early 99. And questions are being asked about the airlines' hedging policies.

In a low margin business, international in nature, and historically highly cyclical, one would have thought that minimising uncertainty should be a priority for management. With pre-tax profit margins often in the 3-7% range, being able to know for certain the medium term price of one of the major cost items (currently between 14-23% of direct operating costs) should be a major benefit in planning.

There is, of course, a cost associated with hedging. Southwest took the view that the cost of hedging instruments would be greater or the same as the risk-weighted cost of an unexpected price surge. In this case it got it wrong.

Its European counterpart, Ryanair, seems to have got it right. It has in place hedges and options for this year at a similar level to 1999 - around 67cents a gallon - and is already has 30% hedged for the first quarter of 2001. Hopefully, the oil price won't collapse again.

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# Financing in 2000: Bankers should be happy

With the 1999 rankings established for equity transactions (by volume and value), bonuses paid, egos massaged etc., investment bankers' thoughts inevitably turn to the prospects for M&A activity, privatisations, IPOs and secondary offerings over the next 12 months. The outlook is that there will be plenty of business in the aviation sector.

1999 saw some major equity transactions, most notably the IPO of UPS, which at \$5.47bn was the largest IPO ever. Other IPOs included: 16% of Air France valued at \$510m; 24% of Amadeus, the CRS, valued at \$850m; and Indigo, the aircraft lessor, for \$49m. Secondary offerings included: Alitalia, the combined domestic and international tranches raising \$2.15bn: Austrian, the international tranche being valued at \$178m; and Galileo, the travel services company, which raised \$1.8bn.

M&A transactions included: Air Canada's take-over of Canadian; American Airlines' purchase of Reno Air valued at \$124m; BA's acquisition of City Flyer; Delta's buy-out of Comair; SIA's 49% stake in Virgin Atlantic valued at \$910m; and SAir Group's minority investments in AOM, LOT and SAA.

The list of major airlines that do not have some form of private ownership has been whittled down to a handful, and some of these are expected to be IPO candidates this year - Asiana, Iberia, TAP, Royal Air Maroc, Royal Jordanian and Saudia, for example. Some 40% of Iberia is being sold to a consortium which includes BA and American, and the Spanish government will sell down a further 54% stake possibly in the first quarter of this year.

A decision is imminent on the sale of a 39% strategic stake in TAP to either Swissair, Air France or Lufthansa, and the Portuguese government is expected to further reduce its shareholding in 2001. An offering of Thai International shares in June is expected to attract strategic investors, which may either secure Thai's place in Star or see its exit.

Other governments are still struggling to reach a decision on the future of their national airlines, trying to reconcile the paradox of inviting strategic investors but remaining unwilling to cede control. Most of the Asian national carriers fall into this category - see table on page 12. In Mexico the government has to decide whether Aeromexico and Mexicana, both owned by Cintra which is a quasi-statal body, should merge before they are sold off. Aerolineas Argentinas looks as if it needs another round of emergency finance.

The failure of Debonair and AB Airlines has made investors more selective in their opinion of the stock of European low-cost carriers. Nevertheless, EasyJet is expected to go for a fourth quarter listing on the London and NASDAQ stockmarkets.

The trend set by Air France in consolidating its franchise partners looks set to continue at other European airlines. On the other hand, non-core activities will continue to be floated off - CRSs and e-commerce subsidiaries like Travelocity went last year. This year SIA, for example, will sell its ground-handling and engineering subsidiaries.

M&A activity is likely in the postal service/integrator sector. UPS has a large war chest for deals, with the TNT Post Group a possible target. The regulators could frustrate such cross-border transactions, though freight is less sensitive than passenger operations.

Further consolidation is possible among the lessors. Size is particularly important, and a number of players are queuing up to try and firmly establish themselves alongside market leaders ILFC and GECAS. Perhaps this year will be the one when someone finally acquires AWAS.

There is enough divergence of opinion in the financial community on the role of leasing in fleet planing, and on the state of the aircraft value cycle, for some large and surprising transactions to take place this year.

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### Air France franchisees: what's the longer-term aim?

In a sudden flurry of activity Air France has consolidated its regional partner airlines by taking majority equity stakes. There are logical reasons for the purchases, but is there a long-term strategy?

In mid-January, Air France announced that it was subscribing to an issue of convertible bonds from Dijon-based Protéus Airlines which on conversion would give it about 42% of the carrier. Air France also reached an agreement with Protéus's shareholders, which gives it the option of eventually buying 100% of the capital. Funds from the issue are to be used to effect a merger between Protéus and Lille-based Air Flandre (which will become the Protéus Group).

A few days later Air France revealed that it had bought 70% of Regional Airlines from the majority owners, the Dubreuil Group (supermarkets, etc.) The transaction valued the Clermont-Ferrand-based airline at Ff400m (\$60m).

At the same time Air France went out of its way to reassure its main franchisee airline, Brit Air, which operates out of Nantes and Lyons, by announcing an extension of its franchise agreement to the end of 2007. (The other Air France partner is Corse Méditerranée, 20% owned by Air France, which has a niche role to/from Corsica.)

Until fairly recently mainstream airline thinking about regional operations was: out-source them as far as possible to lower cost operators with local expertise, maintain a degree of competition among the regional partners to keep costs in check, use them to build feed and take the parent's brand into new markets. So why now the switch to a consolidation strategy?

For Air France probably the main consideration was encroachment on its home territory by competing Euro-majors. BA owns Air Liberté which had a codeshare with Air Flandre. Swissair has a controlling stake in Montpellier-based Air Littoral from Lufthansa and has in effect taken over AOM. Regional

had entered alliances with various carriers but seemed to be edging closer to KLM. Air France was left with close ties to only two of the French regional players - Brit Air and Protéus - which together operated only about 30% of domestic French regional capacity (measured as seats on aircraft of under 100 seats).

### Weakness equals strength

The relative financial weakness of some of franchise partners was ironically becoming a source of negotiating strength - if Air France did not agree to attractive terms on franchise fees or wet lease rates, the risk was that the partners would succumb to competition from other regionals or would seek funding from other Euro-majors. Air France evidently decided that it had to consolidate to protect its market.

Moreover, the regionals needed a stronger capital structure if they were to fulfil their plans for developing their regional jet operations. For perspective, Protéus Group's annual revenues are about Ff550m (\$83m), its commitment on Emb 135 and 145s totals over \$300m; Regional Airlines' revenues are about Ff1.2bn (\$180m), its

<b>FRENCH REGIONAL CAPACITY</b>						
	Turbo-props	35-50 seat jets	(On order)	100-seat jets	150-seat jets	Total
<b>Brit-Air</b>	10	17	(7)	5	0	32
<b>Proteus</b>	21	1	(12)	1	0	23
<b>Flandre Air</b>	20	0	(10)	0	0	20
<b>Regional Airlines</b>	20	10	(19)	0	0	30
<b>Corse Med.</b>	6	0	0	3	0	9
<b>Air France Group</b>	<b>77</b>	<b>28</b>	<b>(48)</b>	<b>9</b>	<b>0</b>	<b>114</b>
<b>AOM</b>	0	0	0	0	13	13
<b>Air Littoral</b>	17	15	0	6	0	38
<b>Swissair Group</b>	<b>17</b>	<b>15</b>	<b>0</b>	<b>6</b>	<b>13</b>	<b>51</b>
<b>Air Liberté</b>	6	0	0	16	10	32
<b>BA Group</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>10</b>	<b>32</b>
<b>Total</b>	<b>100</b>	<b>43</b>	<b>(48)</b>	<b>31</b>	<b>23</b>	<b>197</b>
<b>Source: ACAS.</b>						

commitments on Emb 135, 145 and 170s, about \$280m.

Now that Air France has greater ownership control (although the existing managements are to stay in place) what will be its strategy for the regionals?

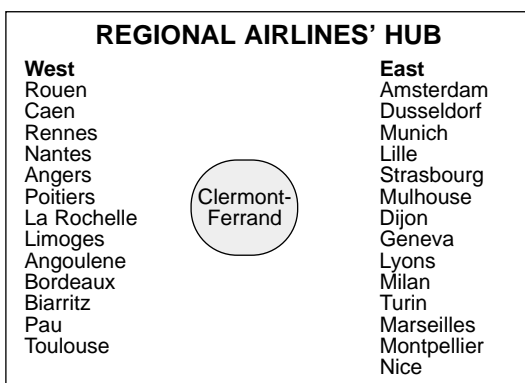
### A new role?

At present, the French regionals do not have a big role feeding traffic into CDG2. Air France domestic feed traffic at CDG comes from its own services to the main provincial cities - Bordeaux and Toulouse in the south-west of the country and Marseilles and Nice in the southeast. Point to point traffic from those cities to Paris Orly is served by La Navette, a shuttle operation which has been developed from the former Air Inter network, and which competes with Air Libert , AOM and the TGV train.

The regionals connect cities in the west of France - like Brest, Nantes and Rennes as well as Toulouse and Bordeaux - with cities in the east - like Strasbourg, Lille and Avignon as well as Marseilles and Nice. They are also increasingly extending their services into Germany, Switzerland and Italy.

These routes are dominated by business travellers and generally have very good yields, but traffic volumes on many of the city pairs are very thin.

The solution adopted by Prot us and Regional has been to build west-east hubs at St. Etienne (just outside Lyons) and Clermont-Ferrand (in the Massif Central, headquarters of Michelin) in addition to their point to point services. These hubs are



designed in the US style to connect banks of aircraft, 19-seat turboprops in Prot us's case and 35-seaters and regional jets in Regional's case. The economics of the St. Etienne hub must be questionable, given the limited volumes of connecting traffic and the relatively low aircraft utilisation. Regional has achieved greater mass at its hub, but it appears that it was still loss-making in 1999.

For Air France the focus must be on increasing feed to CDG2 where it risks losing slots if it or its partners cannot use them. This implies a restructuring of the regional networks with much more emphasis of routes to Paris (and to the secondary hub at Lyons Satolas).

As shown in the table on page 3, the Air France partners now have 48 regional jets on order compared to 43 in the whole of the French market at present. This could represent the basis for the creation of a European version of Comair, the highly successful US regional which has just been bought out by its franchisor and Air France's transatlantic partner, Delta (pages 13-17). Unlike BA or KLM, Air France has not attempted to create a low-cost subsidiary, but it does have a break-through agreement with its pilots union whereby it can outsource from the parent airline all jet operations of less than 100 seats (up to a percentage of total ASKs).

Key issues for Air France then become:

- Does it decide to merge the various regionals to achieve a harmonised management structure but risk losing local skills?
- Does it persist with the west-east hub strategies?
- How does it co-ordinate the regionals with its own domestic services and La Navette?
- Is there scope for further consolidation, for instance, by buying into its foreign franchisees like Jersey European or Gill Airways?
- How does it ensure that the regionals' costs, particularly crew costs, do not inflate?
- Should it consolidate and rationalise the regional jet orders?

There are important implications for BA and Swissair as well. Neither of their French airlines, Air Libert  and Air Littoral, is making money at present. So how could they withstand increased competition from a restructured Air France regional operation?

### Lessors boost Boeing and Airbus

New orders in 1999 fell by some 16% over 1998 levels, Airbus outsold Boeing, and the lessors nearly overtook the airlines.

Despite the fact that the number of aircraft delivered by Boeing and Airbus outstripped orders received, backlogs remain healthy. Boeing has some 1,530 aircraft in its backlog (about 3.2

years at this year's expected rate of production), and Airbus roughly 1,450 (4.5 years equivalent of estimated year 2000 output).

Boeing delivered some 620 aircraft in 1999, but expects a reduction to 490 aircraft in 2000. Airbus delivered 294 aircraft last year and has announced increased production rates for this

BOEING FIRM ORDERS 1999												
	717- 200	737- 3/4/500	737- 600	737- 700	737- 800	747- 400	747- 400F	757- 200	767 300ER/F-200	777 ER-300	777	Total
<b>European airlines</b>												
Air Berlin					6							6
Hapag-Lloyd					3							3
KLM					5	1						6
Lauda			2	4					2			8
TAROM				4	4							8
Transavia					4							4
<b>European total</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>8</b>	<b>22</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>35</b>
<b>North American airlines</b>												
Alaska				13								13
American Airlines					3							3
American Trans Air								1				1
Atlas Air							2					2
Delta					43			9	2	2		56
Midway				15								15
Southwest				12								12
<b>North American total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>46</b>	<b>0</b>	<b>2</b>	<b>10</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>102</b>
<b>Asian airlines</b>												
Air New Zealand		1										1
Cathay Pacific							2					2
China Airlines							13					13
EVA Airways							3					3
Jet Airways					10							10
Korean Air							2					2
Singapore Airlines										10		10
<b>Asian total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>41</b>
<b>Latin American airlines</b>												
COPA				8								8
LAN Chile									1			1
<b>Latin American total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>9</b>
<b>African and Middle East airlines</b>												
EI Al										3		3
<b>African and Middle East total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>
<b>Lessors</b>												
CIT Group				10								10
GATX				4	5		5	2	17			33
GECAS							5		15			20
ILFC				50	1							51
Pembroke	15											15
<b>Lessors total</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>64</b>	<b>6</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>129</b>
All undisclosed orders	0	0	3	36	16	1	1	8	10	3	2	80
<b>TOTAL ORDERS</b>	<b>15</b>	<b>1</b>	<b>5</b>	<b>148</b>	<b>100</b>	<b>2</b>	<b>33</b>	<b>20</b>	<b>47</b>	<b>18</b>	<b>2</b>	<b>391</b>

# Aviation Strategy

## Analysis

year to 307 aircraft, which should rise to about 330 in 2001. So the overall number of aircraft delivered by the "big two" will fall this year as Boeing's cutback in deliveries far outweighs Airbus's increase in production. 1999, with some 915 aircraft deliveries between Airbus and Boeing

(an increase of 16% on 1998), will certainly represent the peak delivery year of the current cycle.

Although Airbus won the order battle in 1999, Boeing argues that the only way to measure market leadership is by aircraft deliveries. With the two manufacturers enjoying nearly matching

AIRBUS FIRM ORDERS 1999												
	A318	A319	A320	A321	A330 TBA	A330 -200	A330 -300	A340 TBA	A340 -300	A340 -500	A340 -600	Total
<b>European airlines</b>												
Aero Lloyd			1	2								3
Air 2000			2	2								4
Air France	15							1				16
Airtours					3							3
British Airways	12											12
Eurowings		1										1
GB Airways			2									2
Iberworld			2									2
Lufthansa			3						8			11
Spanair			10	4								14
Swissair/Flightlease			7			3						10
<b>European total</b>	<b>27</b>	<b>1</b>	<b>27</b>	<b>8</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>78</b>
<b>North American airlines</b>												
America West	15		12									27
Jet Blue			25									25
Northwest		18	12									30
TWA	25											25
US Airways			26		3							29
<b>North American total</b>	<b>40</b>	<b>18</b>	<b>75</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>136</b>
<b>Asian airlines</b>												
Air China	8											8
Air Lanka						3						3
Cathay Pacific							3					3
China Airlines								7				7
Singapore Airlines										5		5
<b>Asian total</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>26</b>
<b>Latin American airlines</b>												
Aerolineas Argentinas											6	6
LAN Chile			2					7				9
<b>Latin American total</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>6</b>	<b>15</b>
<b>African and Middle East airlines</b>												
Egyptair	3											3
Emirates					1							1
<b>Africa/Middle East total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>Lessors</b>												
CIT Group		7	18			5						30
debis AirFinance		11	15	5								31
Flightlease								2				2
GATX Flightlease	12		10	10	6							38
GECAS		11	12	4								27
ILFC	30	16	4	10								60
SALE			20	3								23
<b>Lessors total</b>	<b>42</b>	<b>45</b>	<b>79</b>	<b>32</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>211</b>
All undisclosed orders	0	1	0	0	5	0	0	0	0	0	0	6
<b>TOTAL ORDERS</b>	<b>120</b>	<b>65</b>	<b>183</b>	<b>40</b>	<b>18</b>	<b>11</b>	<b>3</b>	<b>3</b>	<b>22</b>	<b>5</b>	<b>6</b>	<b>476</b>

orderbooks, and with Airbus increasing production as Boeing slows down, a couple of years more of success on the order front may undermine Boeing's market leadership even on this measure.

As one would expect, Airbus continues to outperform Boeing in its home patch Europe, and Boeing continues to outperform Airbus in North America. Although the Asian carriers provided understandably slim pickings for the manufacturers in 1999, Boeing fared better than Airbus largely thanks to 747 freighter sales, the famous SIA 777 deals involving the trade-in of A340s, and from Jet Airways for 10 737-800s.

Orders placed by the lessors increased dramatically in 1999. In 1997 lessors accounted for some 15.6% of new orders placed with Airbus and Boeing; in 1998 this figure fell to 13.2%; in 1999 it soared to 43.5%.

There are two diametrically opposed views on the operating lease market at present. One view is that there has been a fundamental shift in the way airlines will choose to acquire aircraft in the future, that they are increasingly preferring the flexibility that operating leases provide and the off-balance sheet form of funding. The other is that the lessors have been opportunistic in taking

advantage in a slowdown in demand from the Asian carriers in securing delivery positions at presumably attractive prices from the manufacturers. The lessors will be relying on a continuation of the Asian recovery plus no industry downturn in the near future if their investments are to prove worthwhile.

Boeing's goals for 2000 will be to receive launch orders for the long range/high capacity 777-200X and 777-300X aircraft. Certification of the 737-900 in 2001 and 767-400 ER this year will also be a priority.

The manufacturer faces a difficult year. The dearth of orders for both the 757 and 767 models has put into question the likelihood of the manufacturer building new longer-range derivatives of both models, and the 717 has a questionable future unless orders are taken this year.

For Airbus, this year will again be dominated by the A3XX. For deliveries to begin in 2005, Airbus salesmen will be seeking firm commitments for the aircraft this year. But the candidate airlines still seem reluctant to commit, wrangles over the Airbus company structure continue, and financiers are balking at the prospect of betting the company on this one project.

## The wonderful world of RJs

1999 was another hugely successful year for the regional jet manufacturers, well at least for three of them. British Aerospace, now re-named BAE Systems, managed to record just seven new orders in the year, and looks set to fall by the way-side in the same way that Saab has already done. BAE has plans for a mid-life update of the RJ100 but whether this will prove fruitful remains in much doubt.

The success of regional jets has obviously had an adverse impact on the manufacturers of turboprops. ATR looks set to continue production of the ATR 42 and ATR 72 aircraft but only at the modest rate of some 30 aircraft in total for this year. In 1999 regional jet deliveries outnumbered turboprop deliveries for the first time; this year will see more than twice as many regional jet deliveries as turboprop deliveries.

In the world of regional jet manufacturers the

big two, Embraer and Bombardier, have now been joined by a third major player, Fairchild. With long waiting lists at the other two manufacturers, Fairchild was able to take a very healthy share of new orders in 1999.

Its customer base is very narrow, however, dominated by two major orders: from Lufthansa order for 60 Do-728s and from Atlantic Coast Airlines (a Delta Commuter) for 80 Do-328 and Do-428 aircraft. Such large orders, with presumably identical specifications, will bring economies of scale to the Fairchild production line.

The immediate future of Fairchild was secured through the \$1.2bn investment by the private equity group Clayton, Dubilier and Rice and Allianz Capital that was made in December 1999. This gives Fairchild \$400m of growth capital and has secured a further \$800m in debt financing that ensures Fairchild can continue its invest-

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ments in the regional jet market. Further mergers and acquisitions in this sector should also not be ruled out, and a tie-up between Embraer and ATR is rumoured.

The regional jet market is as yet untouched by the operating lessors. One reason is that they are not able to negotiate any discounts in today's market.

Also, mainstream financiers are taking a greater interest in this sector. The list of airlines below includes some with strong credit ratings. The trend for major airlines to take stakes in the

commuter affiliates will further encourage the banks.

Regional jets will increasingly pose a threat to Boeing's 717 and the Airbus's A318. For Bombardier, this year will see the bulk of flight testing completed on its 70-seat CRJ-700, with first delivery set for first quarter 2001. Then it will focus on the larger CRJ-900 aircraft.

Embraer has aircraft both in at the smaller end of the market, the 40 seat ERJ-140 (set to receive its type certification in first quarter 2001), and at the top end of the market, the ERJ-170/190.

OTHER MANUFACTURERS FIRM ORDERS 1999													
	ERJ -135	ERJ -145	ERJ -170	ERJ -190-200	CRJ -100	CRJ -200	CRJ -200LR	CRJ -700	RJ -100	Do- 28Jet	Do- 428Jet	Do- 728Jet	Total
<b>European airlines</b>													
Adria Airways						1							1
Aegean Aviation									4				4
Air Vallee/Locat										1			1
Alitalia Express		6											6
Cimber Air						2							2
City Airlines	1												1
CityFlyer Express									3				3
Crossair		15	30	30									75
Jersey European						4							4
KLM excel		3											3
LOT		6											6
Lufthansa												60	60
Maersk Air						4	1	3					8
Proteus	5	8											13
Regional			10										10
Rheintalflug		2											2
Skyways		2											2
Tyrolean						2							2
<b>European total</b>	<b>6</b>	<b>42</b>	<b>40</b>	<b>30</b>	<b>0</b>	<b>13</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>60</b>	<b>203</b>
<b>North American airlines</b>													
Air Wisconsin							5						5
Atlantic Coast Airlines						23				50	30		103
Inter Canadian		6											6
Midway					3								3
Northwest Airlines							54						54
Ozark										2			2
SkyWest Airlines						30	25						55
<b>North American total</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>53</b>	<b>84</b>	<b>0</b>	<b>0</b>	<b>52</b>	<b>30</b>	<b>0</b>	<b>228</b>
<b>Asian airlines</b>													
Hainan Airlines										19			19
Shandong						5							5
Sichuan Airlines		5											5
<b>Asian total</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>29</b>
<b>Latin American airlines</b>													
<b>Latin American total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>African and Middle East airlines</b>													
Palestinian Airlines						2							2
African & M. East total	0	0	0	0	0	2	0	0	0	0	0	0	2
<b>Lessors</b>													
<b>Lessors total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
All undisclosed orders	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL ORDERS</b>	<b>6</b>	<b>53</b>	<b>40</b>	<b>30</b>	<b>3</b>	<b>73</b>	<b>85</b>	<b>3</b>	<b>7</b>	<b>72</b>	<b>30</b>	<b>60</b>	<b>462</b>



### SIA: a global superpower emerges from the Asian crisis

Back in 1998 SIA appeared to be as shocked as the rest of the Asian airline industry by the collapse of many of the region's economies. Its revenue growth stalled and profits came under pressure. It was forced to defer some deliveries from Boeing. "Sell" recommendations were attached to its shares. Yet SIA emerged from the Asian turmoil unscathed, and potentially stronger than ever.

SIA Group's operating profit margin returned to 12.3% in the six months April to September 1999, the same level as in pre-crisis 1996/97, having dipped to around 10% in the intervening period. Net profits for April to September 1999 totalled S\$579 (US\$345m), representing 13.4% on revenues of S\$4.3bn.

On the measure of IGCF (internally generated cash flow - cash from operations, dividends from associated companies, proceeds from aircraft sales, etc) SIA's underlying strength becomes fully apparent: IGCF totalled S\$2.8bn equivalent to 35% of revenues, and had been around or above this level in the previous two years when reported profits were being squeezed.

Traffic was impacted by the Asian crisis - the number of passengers carried fell by 1% to 11.96m in 1997/98 before rising by 7% to 12.78m in 1998/99, but this was nothing compared to the 20%-plus falls at other Asian carriers. Cathay Pacific's traffic tumbled by almost 9% in 1998.

SIA was able to manage the Asian crisis, redeploying its resources to minimise damage and seize new opportunities. The table on page 10, which breaks down revenue by region, indicates the pattern.

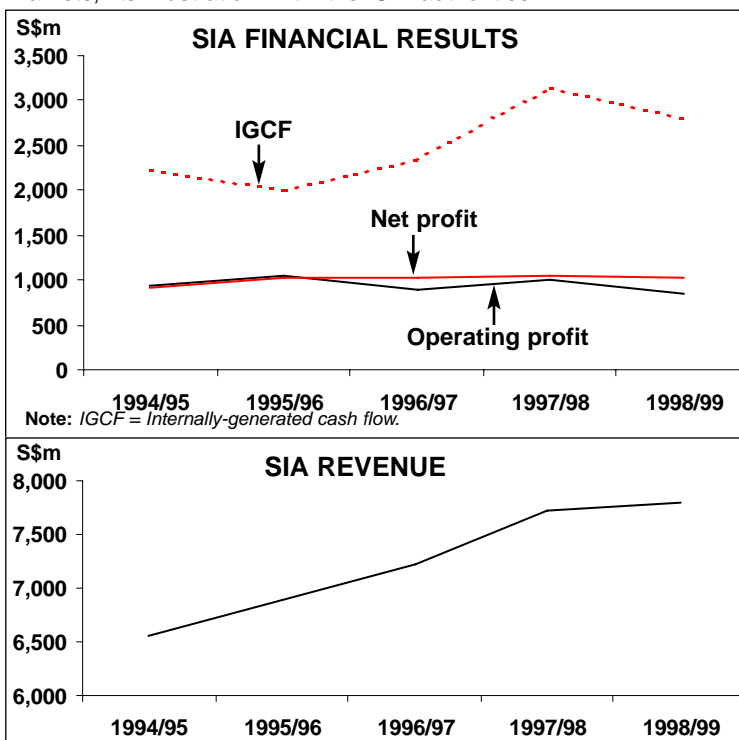
Intra-Asia, SIA's revenues fell by 5% over the period of the Asian crisis. But SIA's traffic actually rose as it captured market share from ailing Garuda and PAL and, to a lesser extent, MAS. The Asian crisis may have enabled SIA to increase its "home" market and emphasise its role as the airline of choice in the Indonesian archipelago, for intra-Indonesian services via Changi as well as international services. It also increased frequencies to Hong Kong, China and

South Korea despite the depressed market conditions there. The major problem for SIA has been the continuing collapse in yield, by about 10% a year, largely caused by currency depreciation.

North American revenues grew by 10% as SIA took advantage of the liberal bilateral signed in 1997 to increase services to New York in particular. The boom in Asian exports to the US has resulted in increased freighter operations. There was a similar picture on European routes, where revenues grew by 16%: traffic has been growing at around 5% a year, and SIA appears to have been able to nearly stabilise yields.

The Southwest Pacific has shown the strongest growth - revenues up by 22%. Again part of reason was the diversion of fifth freedom traffic from Garuda and PAL, but also SIA now has an extensive range of codeshares between European and Australia/New Zealand, with Ansett, Air New Zealand and Lufthansa.

Given SIA's success in the intercontinental markets, its frustration with the UK authorities



### SIA REVENUE BY REGION (S\$m)

	1996/97	1997/98	1998/99	3-year change
North & Southeast Asia	2,167	2,207	2,060	-5%
North America	1,482	1,572	1,625	10%
Europe	1,342	1,512	1,554	16%
Southwest Pacific	743	796	909	22%
India & Africa	589	663	710	21%
<b>TOTAL</b>	<b>6,323</b>	<b>6,750</b>	<b>6,858</b>	<b>8%</b>

over entry into the transatlantic market becomes understandable. The UK in January refused SIA rights to operate fifth freedom flights from Heathrow to the US, despite the fact that UK carriers have extensive beyond rights over Singapore and the US had accepted SIA's route applications. The UK position on this issue is probably untenable, and should change with the inevitable liberalisation of Bermuda 2. But this change will be resisted to the death by BA.

SIA Group's resilience in the Asian crisis was also supported by the performance of its subsidiary companies, notably SATS (Singapore Airport Terminal Services) and SIAEC (SIA Engineering Company). In 1998/99 SIA the airline accounted for just 64% of the Group operating profit, down from 73% in 1996/97. SIA is planning to unlock the value in these subsidiaries through an imminent flotation of probably 49% of each. SATS is estimated to be worth around S\$2.3bn and SIAEC S\$1.5bn, which would imply a cash injection of about S\$1.9bn for SIA, though SIA has made it clear that the primary reason for the exercise is to allow the two companies to grow more rapidly. The IPOs are planned for the second quarter of this year.

### Fleet innovations

SIA has reinforced its position as one of the most important new aircraft customers and maintained its average fleet age at around five years - one of the few that can dictate terms to the manufacturers. Indeed, it raised order negotiating to a new level when its announced last summer that it was not only firming up options on 10 Boeing 777-200IGWs, but also had agreed to trade in 17 A340-300s, including two that hadn't been delivered, to the US manufacturer. The deal caused great distress to Airbus, and has also left Boeing with a major headache in working out how to market the A340s.

SIA is now reported to be pushing Boeing to

revive the 777-100X, a shrunk 250-seater as a replacement for the A310 on its regional routes. The closest Airbus alternative for this market is the A330-200.

The other interesting development with regard to SIA's fleet policy is the sale and leaseback of 12 747-400s over the past two years. SIA evidently decided to get these aircraft off its balance sheet as it foresaw correctly the effect of the Asian crisis on widebody resale values.

### The growth imperative

SIA is unequivocally committed to a growth strategy, which has now become an alliance and acquisition strategy. In its last annual report, the company stated: "As SIA's size increases, and as the SIA network already links Singapore with most of the major international gateways in the world, SIA's growth will slow if it just continues growing entirely on its own ....SIA needs to seek avenues for profitable growth beyond Singapore. Investments in airlines in growing markets will provide SIA with such higher growth opportunities and produce higher profits in the long run."

One of the reasons behind this strategy is cost-related. The Asian crisis accelerated the long term downward trend in SIA's yield. From 1990 to 1999 overall yield has fallen by 36%. As the island state has become progressively wealthier, cost pressures, particularly labour cost pressures, have mounted, meaning that the main way of cutting unit costs has been through greater productivity, and this implies producing more capacity. Staff productivity, measured in ATKs per employee, has in fact nearly doubled over the past ten years, but unit costs have only been reduced by 26%. The net result has been to push SIA's break-even load factor up from 58.3% in 1990 to 63.7% in 1999.

Another driver towards expansion is financial. SIA has an immensely strong balance sheet, S\$12.4bn of shareholders' funds and S\$0.5bn of long-term liabilities according to the unaudited accounts at the end of September 1999. Cash on hand and short term investments had probably risen to S\$3bn by this point, \$1.6bn of which will have gone on the purchase of 49% of Virgin Atlantic last December, but which will be swelled by S\$1.9bn from the sale of SATS and SIAEC.

So SIA has been facing the problem, if it can be described as such, of its high liquidity and

asset strength depressing its return to investors. The solution was to embark of a S\$275m share buy-back last September, initially mopping up most of the shares released by Delta and Swissair, its former partners in Global Excellence, as part of a planned S\$1bn exercise over 12 months. The Singaporean government also removed the limit of 26.5% on foreign ownership of SIA stock.

The effect has been to push SIA's share price up to S\$17.5, capitalising the airline at about S\$20bn (US\$12bn), the highest airline valuation in the world (American is next at about US\$9.5bn).

It should be remembered that SIA is majority government-owned through the state agency Temasek, which has beneficial ownership of about 54% of the shares. Temasek, which also owns parts of Singapore Telecom, DBS Bank and Neptune Orient Shipping is one of the two main vehicles used by the Singapore government to invest overseas (the other is the Singapore Investment Corporation).

In this respect SIA's share buy-back policy is almost an admission of defeat in that it has been unable to find a better use for its funds. This, however, has not been for lack of trying. Early last year SIA appeared to have acquired a 25% stake in China Airlines, which would have been a powerful alliance for connecting southeast Asian and transpacific traffic as well as a strong positioning move in anticipation of the eventual restoration of direct flights between Taiwan and the PRC; the deal fell apart because SIA and CADC, China Airlines' main shareholder, could not agree on terms, but SIA reportedly remains interested. In March last year SIA issued a statement to the effect that it had an understanding to buy News Ltd's 50% stake in Ansett subject to Air New Zealand not exercising its pre-emptive rights on the other half of the Australian Airline; ANZ threatened to do so and again the deal collapsed. Also last year SAir Group managed to outbid a joint offer from SIA and Lufthansa for 30% of SAA.

At least 1999 ended successfully with the purchase of 49% of Virgin Atlantic for £551m (US\$910m). The disappointment of the previous non-deals probably contributed to the full price that SIA paid for Virgin, but there were also genuine strategic synergies - a complementary route network (which will allow SIA a presence on the

SIA FLEET PLANS				
	Current fleet	Orders	Options	Delivery/retirement schedule
747-300	4	0	0	
747-300R	2	0	0	
747-400	34	6	0	Delivery in 2000-01
747-400F	8	2	0	Delivery in 2000
777-200ER	13	38	23	A340s traded in for these. Delivery in 2000-03
777-300	5	0	0	
A310	18	0	0	To be replaced
<b>TOTAL</b>	<b>84</b>	<b>46</b>	<b>23</b>	

Source: ACAS.

Atlantic even though it will not be able to operate the aircraft itself), and, perhaps more importantly, a compatible service product and glamorous image projection. Neither brand will be diluted by the alliance.

### Future investments/alliances

Where will SIA go now in terms of investments and alliances? The following perspective draws on an analysis\* of SIA carried out by an aviation consultancy specialising in this region of the world, the Centre for Asia Pacific Aviation.

The Global Excellence alliance, signed with Delta and Swissair in 1989, was an early indication of SIA global thinking. But this was ultimately an unsatisfactory agreement - too little synergy, too much a marriage of convenience. Subsequent frustrations in making airline investments, including the failure to acquire 25% of Qantas back in 1992, may have been the result of SIA demanding to get to as close to a controlling share as is legally possible.

Many Asian governments have regarded SIA's expansion with caution, but the Asian crisis has left many carriers desperately short of funds and actively seeking investors. Foreign ownership rules are likely to be significantly relaxed in the next few years. SIA, maybe in conjunction

\* "Singapore Inc. marries Virgin Inc", Issue 26 of *Aviation Analyst Asia Pacific*. [www.airportasiapac.com.au](http://www.airportasiapac.com.au)

SIA GROUP BALANCE SHEET	
Sep 1999, S\$bn	
Fixed assets	11.8
Associated companies & long-term investments	0.9
Current assets (net)	1.4
<b>TOTAL</b>	<b>14.1</b>
Deferred income	0.7
Deferred taxes	0.4
Long-term debt	0.6
Shareholders' funds	12.4
<b>TOTAL</b>	<b>14.1</b>

with Virgin, has an extensive list of candidate airlines to consider (see below).

A supplementary strategy has been to establish tourism agreements with national government including the Philippines, Indonesia and Australia, offering promotional benefits and aligning SIA as the carrier of choice, in some cases usurping national airlines. In the UK, for instance, SIA attaches its name to a television advertising campaign promoting Australia.

Although it had signed codeshare agreements with Lufthansa, SAS, United and Air Canada, SIA did not commit to the Star alliance until October last year, and is not due to join formally to the spring of this year. Now, because of the Virgin purchase and other factors, that final agreement is looking less clear-cut.

In global alliances, despite the rhetoric, self-interest dominates and bilateral interests will usually prevail over multilateral ones. SIA's relationship with Air New Zealand and Ansett is a prime example - all the time it was negotiating to join Star it was establishing its own "partnership with-in a partnership" with the two antipodean carriers. SIA also had specific bilateral arrangements with the three main Star members, giving SIA sufficient clout to enable it to claim founding member status despite its late arrival in the alliance.

Bilateral arrangements will continue to dominate SIA's thinking. For example, Ansett, whose international network is expanding through its codeshare with SIA, recently chose SIA as its

partner on the Bangkok route - even though it would have gained greater access by allying with fellow Star member, Thai International. Each time SIA, as a sixth freedom operator, is able to secure a codeshare with a bilateral partner in competition with a national carrier, the more powerful its network becomes. And as code-share restrictions are gradually relaxed, the process will become easier.

SIA's position as the sole designated

Singaporean carrier gives it another competitive advantage when it come to negotiations with multi-airline countries. For example, when Ansett applied for capacity to codeshare between Australia and Switzerland with SIA, Qantas also demanded increased flights but was refused on the grounds that competition guidelines required that Ansett be given a better chance to compete against the national carrier.

Ansett's management is currently in the process of trying to negotiate an MBO, but, should this fail, SIA will very probably renew its interest in this airline. As covered in the last issue of *Aviation Strategy*, Ansett's current weak financial position will be further undermined if Virgin Australia enters the domestic market. It might be more logical for SIA plus Virgin to invest in Ansett and create the new low-cost carrier from there.

SIA might even expand its interest to Air New Zealand, Ansett's 50% parent - through Brierley Investments which has 47% of the airline. Temasek still has a small shareholding in Brierley.

When (or if) SIA's Star's membership becomes official, Thai will be put under greater pressure to withdraw from the alliance and seek comfort in oneworld, assuming the Thai government does not decide to offer SIA a substantial stake. Then there is MAS - the Virgin purchase could mean that Virgin will end its codeshare with MAS, and switch from Kuala Lumpur to Changi. Or SIA could use the Virgin/MAS link to achieved even greater penetration of the Malaysian market.

The big question is: does SIA really need Star? Changi would become Star's Asian super-hub, a crossroads for joint services with United to the US, Lufthansa/SAS to Europe, and Ansett/Air New Zealand to Australasia - a very powerful position.

But, as the Virgin purchase indicated, SIA seems loath to commit itself fully to Star. It is inevitably going to try to complete other airline purchases, and it will not be willing to discuss its purchasing tactics in advance with the other Star members.

Moreover, broader Singapore Inc./Changi interests motivate SIA to retain links with the other global alliances - oneworld (strongly represented at Changi) certainly, but also Air France/Delta and even Wings. Is SIA strong enough to position itself as a global hybrid, transcending the various alliances?

### ASIAN AIRLINES FOR SALE

Privately owned airlines	Amount
Air Philippines	Up to 50%
Angel AL	Up to 15%
Ansett Australia	Up to 50%
Ansett NZ	Up to 50%
Asiana	Up to 50%
Korean	Seeking investor
PAL	Up to 40%
Shanghai AL	Seeking investor
<b>Govt.-owned airlines</b>	
Air India	Up to 40%
Air Niugini	Seeking investor
Biman	Up to 40%
China AL	Up to 35%
Garuda	Up to 50%
Indian AL	Up to 51%
PIA	Seeking investor
Thai Int.	22%

*Source: Centre for Asia Pacific Aviation*

### US regionals being swallowed by US majors

Delta's acquisition of its commuter partners Atlantic Southeast (ASA) and Comair, speculation about further mergers and concerns about the renewal and terms of various feeder agreements made 1999 a turbulent, yet still profitable, year for regional airlines in the US.

The biggest of the recent structural changes affecting the regional sector came about as Delta suddenly decided to focus on its feeder operations. The consequence was that, first, in May 1999 it completed the purchase of 72% of ASA, its Atlanta feeder, for \$700m (it already held 28%). In October this was followed by a \$1.8bn tender offer for Comair, Delta's 22%-owned partner at Cincinnati and Orlando, and the purchase was completed in January.

Both of these deals were challenged in shareholder lawsuits, alleging inadequate offer price, but amendments to the contract terms enabled litigation to be settled. There were no regulatory obstacles as the competitive impact was considered to be minimal. Both carriers were already heavily dependent on Delta for revenue generation.

ASA and Comair have been retained as separate subsidiaries, with their own workforces and salary and benefits structures. Delta has just formed a new subsidiary, Delta Connection Inc., to oversee their operations, as well as those of four independent regional affiliates.

In terms of feeder integration, this brought Delta somewhere between US Airways Group, which owns three of its ten commuter affiliates but has no specific subsidiary to oversee their operation, and AMR and Continental, which have well-established, fully integrated feeder operations.

This turn of events was somewhat unexpected as many industry observers had predicted mergers between the regionals, following Mesa's purchase of CCAir. But, instead, it was the majors that drove the deals. AMR purchased Business Express in March 1999 and is now integrating it with American Eagle. This has meant dramatic expansion in New England and southeastern Canada and new hubs at Boston and LaGuardia. Continental recently acquired a 28% stake in privately-held Gulfstream

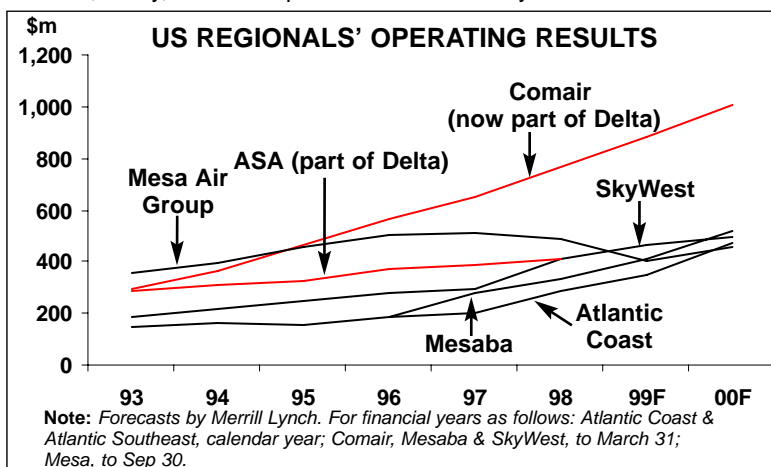
International, its feeder partner in Florida and the Caribbean.

But these deals are obviously much less significant than Delta's acquisitions, which have meant the disappearance of the two most profitable regional carriers as independent entities. Both Comair and ASA were earning operating margins in the mid-20s, when the range for the next three strongest carriers in 1997-1998 was 10-18%.

There are now very few sizeable independent regionals left in the US - only SkyWest, Mesaba, Mesa and Atlantic Coast (ACA), plus Great Lakes Aviation (which in 1998 passed the \$100,000 annual revenue mark). However, Mesa has lost a total of \$137m over the past three years and Great Lakes has also been mostly lossmaking. SkyWest, Mesaba and ACA reported an aggregate net profit of \$94m for 1998, compared to Comair's and ASA's \$200m.

Comair dominated the regional sector with an estimated \$882m revenues and a net profit of around \$143m last year. Its revenues have surged by 15-20% annually since the early 1990s as it pioneered RJ operations in the US. Its success made it a role model for regionals all around the world and fuelled interest in US regional airline stocks, which most analysts only started covering a few years ago.

A reduction in the number of players in a small sector is troubling, even though Comair and ASA had few, if any, direct competitors in the relatively



thin feeder markets. The key question now is: will Delta's moves trigger more regional consolidation?

### Rapid, profitable RJ expansion

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

According to Merrill Lynch, since 1989 the six largest regionals have never failed to achieve a combined annual operating margin of at least 12%. Over the past two years the margin has been as high as 17% (significantly influenced by Comair's and ASA's stellar performance).

The high levels of profitability attained by the regionals reflect high volumes of business traffic (typically 60-70% of the total), lack of direct competition on the relatively thin routes and low cost levels (lack of unionisation, lower salaries). Some of the companies (Comair being a prime example) have been highly innovative, with excellent managements.

Strong capacity growth has continued (around 24% in 1999 for the six largest regionals) because of the rapid move to utilise the 50-70 seat RJs to enhance the traditional 30-seat turboprop fleets. The first RJ entered service in 1993, and the past three years have seen its systemwide introduction. At the end of 1999 US airlines had around

400 RJs in their fleets, and the number is expected to double over the next three years.

The RJ is fundamentally changing the character of regional operations. Its much longer range has opened up numerous new markets, enhanced the breadth of route networks and reshaped traffic patterns. It enjoys a high level of customer acceptance - a key factor for the major carriers. It has led to significant productivity gains, lower costs and better service standards, while unit revenues have held up fairly well.

In short, the RJs have turned into real money-makers. One senior Continental executive said recently that the new ERJ-145 services introduced by Continental Express between Houston and various business centres in northern Mexico are among Continental's most profitable routes (in terms of margins).

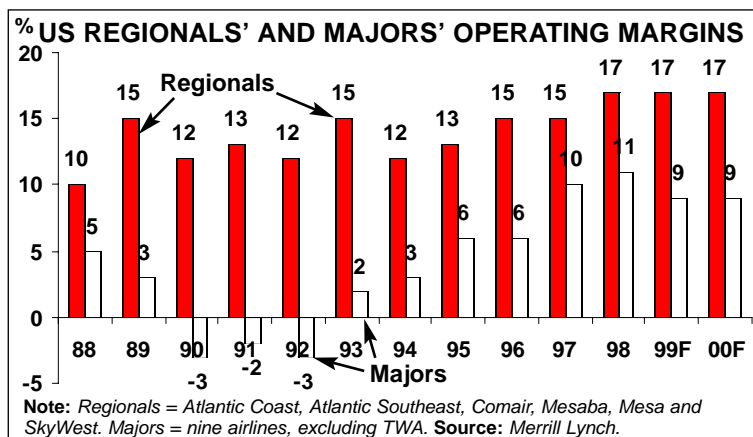
However, demand for turboprops is holding as they are often the best choice for the shortest segments (Saab Aircraft Leasing recently estimated the crossover point between turboprops and RJs at 250-300 miles, though the latest hike in fuel prices may have raised it). Among other carriers, ASA recently placed a sizeable new ATR-72 order.

The major-regional consolidation trend is perhaps understandable as the regional jet has blurred the line between the two industry sectors. The larger new-generation RJs will further close the gap. Consequently, the regional jet features prominently in the major carriers' expansion plans.

American Eagle, which has the world's largest regional jet orderbook (320 orders and options) and a current fleet of about 50 ERJs, has continued its rapid RJ expansion out of Chicago. It has just brought its new 37-seat ERJ-135s to Boston, marking the start of major expansion in the Northeast over the next 18 months.

While Continental Express is currently the fastest-growing regional operation (its traffic surged by 38%) as it expands ERJ-145 service at Houston, United is in the process of aggressively developing regional jet services out of Washington/Dulles, where it is building a hub, as well as Chicago, with the help of ACA and Air Wisconsin.

After building up extensive CRJ operations with Mesa since early 1998, last summer US Airways began adding EMB-145s under a new 10-year agreement with Chautauqua Airlines. This has meant new RJ flying out of LaGuardia,



in addition to continued expansion from Washington National. US Airways is known to be very keen to start placing large RJ orders.

TWA - the only major without regional jet service by feeders - is now moving fast to catch up. In November it signed a 10-year agreement with Chautauqua to operate at least 15 EMB-145s at its St. Louis hub from this summer. That was followed by a similar deal covering up to 15 EMB-145s with Trans States, which will become TWA's first RJ feeder this month (February). TWA said that the strategy will enable it to "fight back in important and high-value regional markets", where its position has been challenged by competitors' RJ service.

The only questionmark hanging over some of the longer-term plans is whether they will be permitted by the majors' pilot unions. Regional jets are a big concern for labour and most pilot contracts include restrictions on jet flying by feeder partners, such as limits on the number of RJs permitted or tying RJ expansion to mainline growth.

US Airways and United have some of the most restrictive union agreements in terms of RJ flying. While the contracts have so far not hampered regional partners' RJ expansion, United is getting close to the limit of 65 50-seat jets agreed on in 1997. This has already delayed new RJ orders that SkyWest and ACA want to place or firm up.

The issue is a key part of the current pilot contract talks at United, and there is obviously hope that the limit will be raised. The two sides have also discussed allowing a much larger number of the smaller RJs (44 seats or less). US Airways' pilots recently agreed to the resumption of RJ talks.

TWA's labour contracts previously prohibited RJ flying, but amendments to the pilot contract in 1998 and a new agreement with the mechanics last summer permitted the operation of up to 15 aircraft. The number can rise up to 33 if the mainline fleet grows, and TWA will obviously be talking to its unions about raising that limit.

Continental and Delta appear to be the only majors currently without restrictions on RJ flying. The ASA and Comair acquisitions were permissible under the pilot contract, but all the feeders have to stick to aircraft with 70 seats or less. However, regional jets now feature prominently in the pilot contract talks at Delta that began in September.

The union wants to make sure that the region-

als will not grow at the expense of mainline operations, so some restrictions seem inevitable.

## Why the ASA and Comair acquisitions?

Delta anticipates both acquisitions to lead to revenue gains from more efficient operations, market growth, better aircraft utilisation and improved business functions. But it obviously did not need to buy its feeders for those reasons.

Service quality problems were an issue with ASA, though not with Comair. Delta had raised concerns about some aspects of ASA's customer service since late 1997 (in part due to labour problems) and had threatened to bring in a new feeder to take over some of ASA's flying at Atlanta.

The ASA deal, in particular, made business sense in that Delta got it for a bargain price. It made the move before ASA's share price could benefit from rapid growth facilitated by future RJ deliveries and got away with offering only a 6% premium, which valued the company at just 12.8 times forecast 1999 earnings.

Some analysts think that Delta paid too much for Comair, but others believe that the price was right in light of a possible serious disruption (the contract was due to expire on October 31). Although Delta's offer price represented a 31% premium, it was below Comair's 52-week high as the shares had fallen due to concerns about the terms of the new agreement.

ASA and Comair were not typical acquisition targets as they were healthy and extremely profitable. Oddly, it was their extremely high profit margins that led to the loss of independence. Delta had argued that the existing feeder contracts overcompensated the regionals and was pressing for more favourable revenue-sharing.

Delta's filings to the SEC gave the impression that the major used its muscle to effectively force the small carriers to choose the lesser of two evils. They had to choose between being acquired and accepting new reduced-fee agreements that would have cut their profit margins sharply.

According to the SEC documents, Delta's proposed new feeder agreement with ASA could have reduced the smaller carrier's net income by \$21m in 1999 and by \$45-55m annually thereafter. The terms of Comair's agreement would

have "substantially reduced" its net income, and on top of that Delta had proposed various changes that would have further adversely affected its financial performance.

In ASA's case, the additional threat to bring in a new feeder and the uncertainty of continuing a relationship that was terminable on 30 days' notice made the outcome inevitable. However, Comair's board accepted the merger proposal only after seriously exploring strategic alternatives that did not involve Delta.

The deal has certainly paid dividends to ASA in terms of new growth opportunities, which it had previously been denied when Delta was unhappy about its service quality. Over the past six months it has begun numerous new CRJ services out of Atlanta. Its planned LaGuardia-Columbia (SC) service due to start in March marks a new approach in that it will bypass Delta's main hubs.

ASA's and Comair's credit quality has undoubtedly improved, which means reduced costs for financing future RJ fleets. But they are likely to lose some of their efficiency and unit cost advantage, now that they are part of a large company with large overheads. There is also the challenge of keeping the pilot groups separate. All of this means that their operating margins will come down (and we may never know what they are).

However, key management talent has been retained, thanks to the appointment of Comair CEO/COO David Siebenburgen as president and CEO of Delta Connection and the promotion of various senior executives within Comair.

### Will SkyWest and ACA stay independent?

Delta's moves understandably led to extensive speculation about possible merger deals involving the remaining independents. Many believed that United, in particular, would acquire either SkyWest or ACA as a defensive move. However, so far there has been no sign of any such response from United. This may have something to do with United's current contract talks with its pilots. Also, United may have little incentive to acquire SkyWest or ACA as the feeder contracts are working well and do not generate excessively high profit margins for the smaller carriers.

Instead, there seems to be a new trend for a larger number of multiple connection agreements - something that Comair considered before decid-

ing that it had simply built too heavily on the Delta relationship and that it would be too risky to start from scratch with the other majors. This new trend offers hope for the survival of the remaining regionals as independent companies.

As a watershed development, in September Delta forged a 10-year partnership with ACA for the exclusive use of 45 RJs in the Northeast, starting this March. The deal covers 25 Dornier 328JETs (a new order) and 20 CRJ-145s that ACA already had on order for delivery by the end of 2002, plus access to 30 options. ACA set up a business unit for Delta Connection, to separate it from United Express flying.

Like SkyWest, which feeds to Delta at Salt Lake City and United along the West coast, ACA will be a dual-role feeder. It has continued to expand United Express flying at Chicago and Washington Dulles as more CRJs are delivered, while waiting for final approval from United to firm up a conditional order for up to 110 328/428JETs placed in July.

The new Delta contract should be highly beneficial for ACA as it will not only mean new growth opportunities but also diversify ACA's revenue stream and provide useful leverage with United.

In December SkyWest, too, received a welcome confirmation of the status of its relationship with Delta. Its agreement was extended till June 2010 and it was able to place a long-awaited new order for 20 CRJs for the Salt Lake City operation. Including previous orders, it will take delivery of 55 new CRJs over the next four years. But it is still waiting to hear from United about future RJ requirements on the West coast.

The multiple-partner strategy was pioneered in the early 1990s by Mesa, which continues to feed to US Airways and America West (it lost its United Express contracts two years ago) and independently in New Mexico and Colorado. And the practice is well-established among the smaller regionals like Trans States and Chautauqua.

Mesa appears to have regained the confidence of its partners, thanks to vastly improved operational performance. The US Airways contract was recently expanded to 28 RJs and extended till 2007, and the America West agreement is also likely to be expanded. In late January Mesa placed a long-awaited order for 36 ERJ-145s plus 64 options, with deliveries beginning later this quarter.

The Delta-United marketing relationship may have eased things for the larger regionals, though



analysts say that the major carriers generally now seem more tolerant of sharing their feeders.

However, further acquisitions or mergers obviously cannot be ruled out. The Northwest-Mesaba relationship is rather intriguing in that the small carrier, which continues to perform well financially and operationally and has adequate cash reserves, seems totally dependent on Northwest, which owns about 40% of its stock. But there have been many clashes in the past, and Mesaba now needs to sort out its growth plans beyond June, when it receives its last AVRO regional jet. Might Northwest now acquire it while its share price is still weak, to ensure common goals in the future?

### Impact of fee-per-departure agreements

The traditional revenue-sharing arrangements between the majors and their feeders have increasingly given way to "fee-per-departure" type remuneration. ACA's new contract with Delta is on that basis, as are SkyWest's agreement with United, Mesa's with America West and US Airways (RJs only) and Mesaba's with Northwest. This trend has had major impact on the economics of those carriers' operations.

Under the old prorate agreements, the regionals kept all their local revenues and shared the revenues from connecting passengers with the majors. Under the new arrangements, the majors pay a flat fee per flight - in other words, buy the capacity from the regional. There is usually a nominal "incentive payment" per passenger if specific operational performance and service standards are exceeded. The basic payment assumes a specified level of fuel prices; if the prices rise, the regionals are credited the difference.

The new types of arrangements mean that the regionals make the same amount of money regardless of what the fares are and how many passengers are on board. This is obviously beneficial in an industry downturn or a weak fare environment. The contracts also make the regionals effectively hedged against sudden hikes in fuel prices - one of the reasons why Mesaba and SkyWest have continued to post strong earnings growth in recent quarters.

ASA and Comair turned down these new types of contracts, but analysts say that they were probably the only two regionals that stood to

### REMUNERATION ARRANGEMENTS WITH THE MAJORS

Regional	Major	Basis of remuneration	% of total ASMs
SkyWest	United	fee-per-dept	60%
	Delta	prorated	40%
Atlantic Coast	United	prorated	68% by 2002
	Delta	fee-per-dept	32% by 2002
Mesaba	Northwest	fee-per-dept	100%
	Mesa	America West	fee-per-dept
	US Airways (RJs)	fee-per-dept	46%
	US Airways (turboprops)	prorated	54%
	Others	prorated	54%

lose out and that just about everyone else will benefit. The new contracts will make extremely high profit margins a thing of the past, but they will remove risk and ensure a stable and predictable earnings stream.

For Mesa, SkyWest and soon also ACA, the new types of contracts provide a useful way of diversifying risk. Mesa, which reported a satisfactory \$7.8m net profit for the December quarter, said that the adverse effects of the Y2K revenue impact and higher fuel prices were "significantly muted" due to the fee-per-departure agreements. By contrast, ACA posted a 23% decline in net earnings as it took the full brunt of the adverse revenue and fuel cost trends. But ACA is expected to reduce its dependence on the prorate agreement with United from 100% at present to 68% by 2002, when 32% of its capacity will be under the "ASM-buy" Delta agreement.

### Prospects

A continued rapid rate of regional jet deliveries will maintain the US regionals' capacity growth similar to the past two years' plus-or-minus 20% level in 2000, and good growth is expected until at least 2003.

After that the RJ market may become saturated, given airport and ATC capacity constraints. But there will still be growth as larger RJs are used to develop new medium and long haul markets and boost capacity in markets now served with 50-seat jets.

Earnings growth for the regional airline group should be in the 10%-20% range annually over the next 3-4 years, but profit margins will come down. Merrill Lynch suggests that the long term sustainable operating margin could be around 15%. This assumes continued healthy earnings growth for carriers like SkyWest, Mesaba and ACA and a strong turnaround at Mesa this year.

By Heini Nuutinen

# Route and network profitability - the basic principles

**P**rofitability measurement capability is a vital element in the management of an airline's network and cost base. Key resource allocation decisions are made on the basis of the information provided, from frequency changes, to route closures/launches, to fleet reduction/expansion, to hub investment all the way up to short-haul vs. long-haul network trade-offs. The system and approach are a potential source of competitive advantage - or disadvantage.

The information has to be right, and management must know and understand how to interpret what is being presented. The challenges of achieving such a capability can be most easily encapsulated in three expressions of management consulting motherhood:

- **Robustness:** Is data captured accurately at source? Are cost and revenue allocation mechanisms (to routes and/or O&Ds) appropriate?
- **Consistency:** Is data handled/processed consistently with other MIS tools? Are the Route Profitability, Sales Performance Monitoring and central MIS (management accounting and planning) systems sufficiently integrated to provide a consistent platform for decision-making?
- **Transparency:** Are reports easy to understand and interpret? What are the key measures and analyses to focus on? Are the network impacts of routes and decisions clear? What is the revenue/profit impact of code-shares and alliances?

Alongside all this, there are multiple technology issues: how and where to process/warehouse such huge volumes of data; integration with existing architecture; meeting data and information availability and timeliness goals; designing data quality control processes; enabling flexible on-line/ad-hoc analysis; and so on.

In this section of *Aviation Strategy* we will be publishing a series of articles focusing on this potential management nightmare:

- Setting the objectives and principles;
- Allocation of costs and revenues to flights/routes;
- Report strategy and content; and
- Achieving a network orientation.

This article covers objectives and principles,

and is intended as a scene setter. The aim is to alert senior management, system owners and developers to the need to build a platform for future competitiveness. Some of it may sound like motherhood, but it is rare to find an airline that has followed all these "statements of the obvious". People and technological history often get in the way.

## Development principles

Most airline managers in today's business environment need the following:

- Fast reporting of changes in the market place;
- A focus on profit;
- An ability to dig behind and analyse profit issues;
- Visibility of the impact (forecast) and performance (actual) of decisions;
- A sound and common basis for decision-making.

The technology available today allows these needs to be satisfied. However, very few airlines have yet reached this state. Those that have know that such a development is most definitely evolutionary rather than revolutionary.

Technology is continuously changing. New systems take time to develop, integrate and implement. And because of the scope of systems and functions involved in Network Profitability Measurement, once one technology or system is implemented, another part of the whole needs upgrading.

And management requirements are slow to develop and mature as well. It takes time to define, refine and agree the analyses that become the foundation of decision-making because:

- Network performance measurement is by its very nature cross-functional, encompassing, for example, sales, network planning, scheduling, finance, and each constituency has its individual needs and biases;
- The amount and sophistication of available information is increasing;
- It takes time to align data and information needs with an ever-changing and complex market place.

Leading airlines typically quote a period of

three years before a stable set of "core" management reports are established and consistently used. So, while accepting that change will be evolutionary, senior management needs to establish the following principles for development.

**Minimise the duplication of data processing and storage** Ideally, cost and revenue information should be fed into MIS tools from a set of integrated data warehouses that capture, check and store base data in one place. Duplication is full of dangers. For example, an airline that feeds coupon data from its revenue accounting system into more than two separate data warehouses to feed different MIS tools risks increasing the cost of data processing, degrading the revenue accounting system and causing data reconciliation and consistency problems.

**Establish a centralised control or guardianship over data definitions** An airline's management team must develop a common language and understanding of key measures. Too often, terms such as gross revenue and net revenue have completely different inclusions/exclusions across and even within departments.

**Build quality into the core data as early in the data flow as possible** At the heart of Network Profitability measurement is an airline's internal cost and revenue accounting systems. The more robust and accurate these sources, the less reprocessing is required and the overall data integrity improves. For example, best-practice airlines will endeavour to allocate year-end/back-end ALP or CLP (Agency or Corporate Loyalty Programme) commission payments to coupons within the revenue accounting process. This requires centralised customer contracts and identification number database, integrated into the revenue accounting process.

**Define a plan for the data flow** Almost inevitably, management will be facing an existing information and data infrastructure that does not reflect the above principles. A path to move from here to there has to be laid out. In an IT sense, this plan represents a system architecture strategy. The first step is vital - focus on building really solid foundations, i.e., state-of-the-art revenue accounting and data warehouse capability. The plan sets in stone the goals of minimal duplication and accurate/early data capture.

**Involve the users and get buy-in** The system may employ the best technology in the world. However, if it is not accepted by the users, if the

data capture, processing and quality control are not believed to be rigorous and sufficiently transparent, then the full potential of the system will not be realised. Do not create impenetrable "black boxes".

## Functionality objectives

Functionality requirements driving the MIS systems (data sources and tools) are tough and multi-faceted:

- Profit analysis by: flight number, city pair, region, O&D, country, fleet type, hub, distribution channel, operator;
- Sales and yield analysis by: O&D, point of sale, compartment, city pair, flight number, agent, distribution channel, flight number, city pair, fare type, passenger type, booking class;
- Breakdown of yield trends by cause, including mix, average revenue and currency variations;
- Transparency of the network contribution of flights (upline/downline revenues net of spill);
- Transparency of performance of alliances, code-share agreements and hard/soft-block deals;
- Data available and analysable at the coupon-level;
- Ability to handle multi-leg flights and "utilisation-driven add-ons"
- Reflection and transparency of cost variability in network modelling and planning;
- Reprocessing flexibility as business rules and requirements change;
- Storage of adequate history to support indexing and trend analysis;
- Integration with the planning and budget process;
- Drill-down capabilities for detailed investigation;
- User-friendly interface;
- "Parameterisable" O&D building;
- Standard tool design requirements: accessibility, timeliness, speed;
- Feedback loops to improve forecast/estimation accuracy e.g., ALP/CLP payments

This is a fairly exhaustive list, and users and developers must recognise the need of learning to "walk before you can run". Management of the network on an O&D basis - particularly revenue management - is the latest area for serious investment by the large, technically-sophisticated carriers. Getting basic route profitability reporting right - good data, robust allocation mechanisms and actionable information - is the first challenge for some.

By David Stewart  
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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
Nov 99	16.4	9.4	57.3	17.8	12.8	72.0	11.2	8.6	77.1	40.4	30.1	74.6	59.8	41.6	69.5
Ann. chng	8.6%	9.6%	0.5	13.7%	20.1%	3.8	2.5%	6.2%	2.7	8.7%	13.6%	3.2	9.0%	13.1%	2.5
Jan-Nov 99	184.4	116.6	63.2	201.9	155.3	76.9	123.3	95.5	77.4	452.5	343.9	76.0	668.9	482.2	72.1
Ann. chng	6.7%	4.6%	-1.2	13.3%	11.6%	-1.1	-0.7%	3.1%	2.9	9.0%	8.3%	-0.5	8.5%	7.7%	-0.5

Source: AEA.

### US MAJORS' SCHEDULED TRAFFIC

	Domestic			North Atlantic			Pacific			Latin America			Total international		
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %
1991	835.1	512.7	61.4	108.0	75.2	69.6	117.0	78.5	67.1	44.3	27.4	61.8	269.2	181.0	67.2
1992	857.8	536.9	62.6	134.4	92.4	68.7	123.1	85.0	69.0	48.0	27.4	57.0	305.4	204.7	67.0
1993	867.7	538.5	62.1	140.3	97.0	69.2	112.5	79.7	70.8	55.8	32.5	58.2	308.7	209.2	67.8
1994	886.9	575.6	64.9	136.1	99.5	73.0	107.3	78.2	72.9	56.8	35.2	62.0	300.3	212.9	70.9
1995	900.4	591.4	65.7	130.4	98.5	75.6	114.3	83.7	73.2	62.1	39.1	63.0	306.7	221.3	72.1
1996	925.7	634.4	68.5	132.6	101.9	76.8	118.0	89.2	75.6	66.1	42.3	64.0	316.7	233.3	73.7
1997	953.3	663.7	69.6	138.1	108.9	78.9	122.0	91.2	74.7	71.3	46.4	65.1	331.2	246.5	74.4
1998	961.0	679.1	70.7	150.3	118.5	78.8	112.1	81.6	72.8	84.0	52.3	62.3	346.4	252.4	72.9
Oct 99	87.4	60.4	69.2										31.1	23.6	75.8
Ann. chng	5.6%	5.8%	0.2										4.8%	9.0%	2.9
Jan-Oct 99	839.2	593.1	70.7										300.8	226.8	75.4
Ann. chng	5.0%	4.3%	-0.4										3.6%	5.8%	1.6

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

### ICAO WORLD TRAFFIC AND ESG FORECAST

	Domestic			International			Total			Domestic growth rate		International growth rate		Total growth rate	
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK %	RPK %	ASK %	RPK %	ASK %	RPK %
1992	1,305	837	64.2	1,711	1,151	67.3	3,016	1,987	65.9	3.0	4.6	15.1	15.3	9.5	10.5
1993	1,349	855	63.3	1,785	1,205	67.5	3,135	2,060	65.7	3.4	2.0	4.4	4.8	3.9	3.6
1994	1,410	922	65.3	1,909	1,320	69.1	3,318	2,240	67.5	4.6	7.9	6.9	9.4	5.9	8.8
1995	1,468	970	66.1	2,070	1,444	69.8	3,537	2,414	68.3	4.1	5.4	8.5	9.4	6.6	7.8
1996	1,540	1,043	67.7	2,211	1,559	70.5	3,751	2,602	70.4	4.9	7.4	8.8	10.0	7.3	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
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	127	117	114	115	111	179	150	155	153	135	220	151	152	136	122
*2000	131	120	117	118	112	191	156	164	162	142	239	158	159	143	126

Note: \* = Forecast; Real = inflation adjusted. Source: OECD Economic Outlook, December 1999.

# Aviation Strategy

## Macro-trends

### COST INDICES (1990=100)

	Europe						US					
	Unit revenue	Unit op. cost	Unit lab. cost	Efficiency	Average lab. cost	Unit fuel cost	Unit revenue	Unit op. cost	Unit lab. cost	Efficiency	Average 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		
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	1999	0.621	1.938	6.498	1.587	1.010	103.3	5.92%***
*2000	127	126	127	117	108	Jan 2000	0.610	1.954	6.552	1.611	1.001	105.9	5.98%***

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

### FUEL PRICES

	SPOT RATE Cents/US gallon		SPOT RATE Cents/US gallon		SPOT RATE Cents/US gallon		SPOT RATE Cents/US gallon	
1982		91	1987	50	1992	58	1997	56
1983		81	1988	47	1993	52	1998	41
1984		80	1989	55	1994	49	1999	50
1985		76	1990	73	1995	50	2000(Jan)	80
1986		45	1991	60	1996	63		

**Notes:** Annual averages for JetA at New Orleans, wholesale prices, exclusive of pipeline charges

**Source:** Platts.

### JET AND TURBOPROP ORDERS

	Date	Buyer	Order	Price	Delivery	Other information/engines
ATR	-	-	-	-	-	-
Airbus	Dec 14	TWA	25 A318s			
	Dec 17	Undisclosed	1 A319			
	Dec 21	GECAS	10 A319s, 4 A320s, 1 A321			
	Dec 31	Air France	15 A318s			
	Jan 24	Air Bosna	2 A319s		03	+ 2 options CFM56-5
BAe	-	-	-	-	-	-
Boeing	Dec 21	Delta	3 737-800s, 2 757-200s		1Q-2Q01	Previously "unidentified" customer
	Dec 22	GATX	5 737-800s, 2 757-200s		00-01	Previously "unidentified" customer
	Dec 22	ILFC	50 737NGs			Previously "unidentified" customer
	Dec 23	Singapore AL	10 777-200ERs			Previously "unidentified" customer
	Dec 23	Alaska Airlines	2 737-700s			Previously "unidentified" customer
	Dec 29	Air Berlin	6 737-800s	\$300m	00-02	CFM56-7
	Dec 30	Hapag-Lloyd	2 737-800s	\$100m	01	Previously "unidentified" customer
	Jan 11	Turkmenistan	1 757-200	\$67m	1Q01	Previously "unidentified" customer
Bombardier	Jan 21	J-Air	2 CRJ200s			Sixth Japanese operator of CRJs
Embraer	?	Sichuan Airline	5 ERJ-145LRs	\$200m	2Q00	+ 5 options
Fairchild Dornier	-	-	-	-	-	-

**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	%	
<b>Korean Air</b>														
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	TWELVE MONTH FIGURES													
Oct-Dec 98	3,283	3,063	219	212	58,246.4	40,190.3	69.0	5.64	5.26	25,557		9,480.0		17,050
Jan-Mar 99														
Apr-Jun 99														
Jul-Sep 99														
<b>Malaysian</b>														
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	SIX MONTH FIGURES													
Oct-Dec 98	860	958	-98	-11			57.2							
Jan-Mar 99														
Apr-Jun 99														
Jul-Sep 99														
<b>Singapore</b>														
Jan-Mar 98	2,336	2,080	256	258	39,093.6	26,224.3	67.1	5.98	5.32	5,822	7,303.0	4,951.5	67.8	
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	2,232	2,013	219	278	41,466.2	29,456.2	71.0	5.38	4.86	6,240	7,693.4	5,225.2	67.9	
Oct-Dec 98	SIX MONTH FIGURES													
Jan-Mar 99	2,421	2,130	291	341	41,725.5	30,843.7	74.9	5.80	5.10	6,537	7,958.5	5,540.3	69.6	
Apr-Jun 99	SIX MONTH FIGURES													
Jul-Sep 99	2,577	2,259	317	346	43,145.7	32,288.3	74.8	5.97	5.24	6,752	8,251.9	5,852.7	70.9	
<b>Thai Airways</b>														
Jan-Mar 98	631	558	73	610	12,211.0	8,522.0	69.8	5.17	4.57	4,000	1,715.0			
Apr-Jun 98	586	583	3	-121	12,084.0	7,963.0	65.9	4.84	4.82		1,700.0			
Jul-Sep 98	629	584	45	176	12,118.0	8,769.0	72.4	5.19	4.82					
Oct-Dec 98	727	647	80	170	12,599.0	9,195.0	73.0	5.77	5.14					
Jan-Mar 99	675			125										
Apr-Jun 99	651			93										
Jul-Sep 99														
<b>Air France</b>														
Jan-Mar 98	5,126	5,079	47	18										
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	5,088	4,894	194	228	49,724.0	38,070.0	76.6	10.23	9.84					
Oct-Dec 98	SIX MONTH FIGURES													
Jan-Mar 99	5,550	5,552	-2	56	51,394.0	38,242.0	74.4	10.80	10.80					
Apr-Jun 99	SIX MONTH FIGURES													
Jul-Sep 99	5,249	4,889	360	316										
<b>Alitalia</b>														
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	TWELVE MONTHS FIGURES													
Oct-Dec 98	5,152	4,432	720	235	51,638.4	35,427.2	68.8	9.98	6.86	24,103			18,825	
Jan-Mar 99														
Apr-Jun 99														
Jul-Sep 99														
<b>BA</b>														
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	7.99	7.68	10,285	6,130.0	3,933.0	64.2	64,366
Apr-Jun 99	3,527	3,378	149	302	45,813.0	32,032.0	69.9	7.70	7.37	11,733	6,437.0	4,215.0	65.5	65,179
Jul-Sep 99	3,933	3,742	191	49	47,465.0	35,873.0	75.6	8.29	7.88	12,983	6,690.0	4,689.0	70.1	65,607
<b>Iberia</b>														
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	TWELVE MONTH FIGURES													
Oct-Dec 98	4,451	4,100	351	356	45,041.6	32,520.0	72.2	9.88	9.10	21,753		3,740.0		22,065
Jan-Mar 99														
Apr-Jun 99														
Jul-Sep 99														
<b>KLM</b>														
Jan-Mar 98	1,538	1,568	-30	528	17,595.0	13,240.0	75.2	8.74	8.91		2,995.0	2,259.0	75.4	33,227
Apr-Jun 98	1,702	1,572	130	105	18,600.0	14,290.0	76.8	9.15	8.45		3,177.0	2,365.0	74.4	35,666
Jul-Sep 98	1,865	1,675	190	121	19,363.0	15,984.0	82.6	9.63	8.65		3,359.0	2,583.0	76.9	33,586
Oct-Dec 98	1,673	1,661	12	-15	18,476.0	13,767.0	74.5	9.05	8.99		3,214.0	2,415.0	75.1	33,761
Jan-Mar 99	1,550	1,670	-120	-45	17,716.0	13,294.0	75.0	8.75	9.43		3,088.0	2,284.0	74.0	33,892
Apr-Jun 99	1,626	1,547	79	37	18,778.0	14,302.0	76.2	8.66	8.24		3,253.0	2,427.0	74.6	34,980
Jul-Sep 99	1,731	1,596	135	32	19,630.0	16,083.0	81.9	8.81	8.13		3,352.0	2,640.0	78.8	35,226
<b>Lufthansa***</b>														
Jan-Mar 98	2,902	2,860	42	223	23,742.0	16,236.0	68.4	12.22	12.05	8,778	4,618.0	3,171.0	68.7	54,849
Apr-Jun 98	3,507	3,081	426	289	26,132.0	19,489.0	74.6	13.42	11.79	10,631	5,078.0	3,575.0	70.4	54,556
Jul-Sep 98	3,528	3,167	361	198	26,929.0	20,681.0	76.8	13.10	11.76	11,198	5,231.0	3,748.0	71.6	54,695
Oct-Dec 98	2,929	2,106	823	96	25,530.0	18,259.0	71.5	11.47	8.25	9,819	5,204.0	3,676.0	70.6	55,368
Jan-Mar 99	3,301	3,210	91	64	25,445.0	17,942.0	70.5	12.97	12.62	9,658	4,972.0	3,435.0	69.1	56,420
Apr-Jun 99	3,322	3,012	310	97	30,500.0	22,279.0	73.0	10.89	9.86	11,444	5,626.0	3,993	71.0	53,854
Jul-Sep 99	4,049	3,677	382	184	31,335.0	23,866.0	76.2	12.92	11.73	11,891	5,699.0	4,142.0	72.7	
<b>SAS</b>														
Jan-Mar 98	1,184	1,077	106	76*	7,761.0	4,628.0	59.6	15.25	13.88	4,863				24,722
Apr-Jun 98	1,323	1,149	174	107*	7,546.0	5,260.0	69.7	17.53	15.23	5,449				25,174
Jul-Sep 98	1,283	1,152	131	127*	8,283.0	5,843.0	70.5	15.49	13.91	5,714				26,553
Oct-Dec 98	1,368	1,266	102	46*	8,116.0	5,089.0	62.7	16.86	15.60	5,431				27,071
Jan-Mar 99	1,203	1,227	-24	-3*	8,062.0	4,713.0	58.5	14.92	15.22	5,017				27,110
Apr-Jun 99	1,357	1,294	63	60*	8,466.0	5,571.0	65.8	16.03	15.28	5,580				27,706
Jul-Sep 99	1,173	1,150	23	12*	8,450.0	5,667.0	67.1	13.88	13.61	5,589				27,589
<b>Swissair**</b>														
Jan-Mar 98	SIX MONTH FIGURES													
Apr-Jun 98	1,907	1,780	127	86	18,983.8	13,138.7	70.5	10.05	9.38	6,922				9,756
Jul-Sep 98	SIX MONTH FIGURES													
Oct-Dec 98	2,187	2,070	117	165	20,476.8	15,391.3	75.2	10.68	10.11	5,277				10,396
Jan-Mar 99	SIX MONTH FIGURES													
Apr-Jun 99	1,932	1,877	55	57	23,411.0	16,130.0	68.9	8.25	8.02	7,784				10,715
Jul-Sep 99	SIX MONTH FIGURES													

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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