

# Aviation Strategy

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## Western capitalist colonialism in Asia

In the boom years Asian airlines generally eschewed alliances, which appeared to be irrelevant in a market where traffic growth of 10% p.a. was the norm. They were perceived as a Western strategy, a means by which airlines could grow through increased market share on mature and sluggish routes. Equity-based alliances were even more improbable because management independence was jealously guarded and stock market ratings were high compared with Europe or the US.

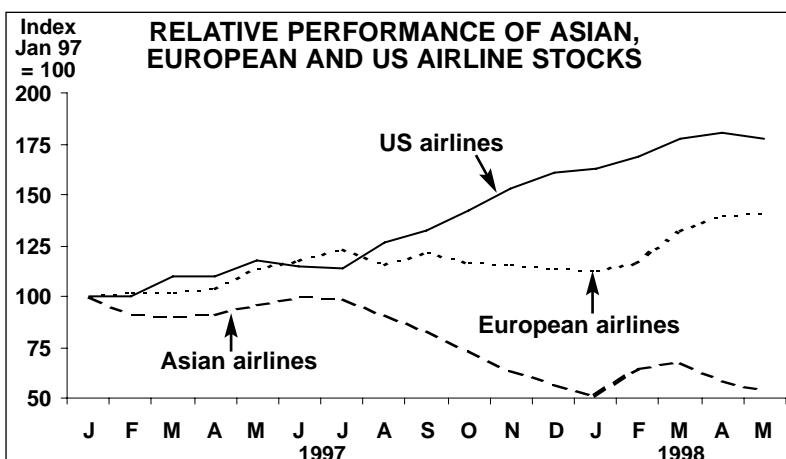
Now the situation seems to be changing radically. Recent reports of alliance and sales activity include:

- Lufthansa and SIA making a joint offer for 25% of Thai;
- BA and Qantas making a bid for part of Thai;
- Northwest being a front-runner for a stake in Thai;
- Northwest being heavily involved in sales discussion with Lucio Tan, chairman and major shareholder in PAL;
- Swissair cashing in its now irrelevant small stake in SIA and considering an investment in MAS;
- BA and American opening negotiations with Cathay Pacific over membership in its alliance and perhaps more;
- China Airlines, suffering badly from customer reaction to its latest crash, perhaps offering shares to Western investors;
- ANA entering the Star alliance and JAL linking up with BA/AA;
- Asiana putting all its assets up for sale.

From the perspective of a Western airline there would seem to be strong incentives for investing in Asian aviation.

The stockmarket price of many Asian airlines now reflects little more than net asset value and would appear to offer the prospect of bargain buys. Their valuations have halved over the past 18 months while those of European carriers have risen by about 40% and those of US airlines by about 80% (see chart, below).

Also, linking up with Asian carriers could be a means of facilitating the transfer of surplus aircraft from there to currently more productive markets in the West (*continued on page 2*).



### Analysis

Western capitalist colonialism in Asia **1-2**

SIA: an island of calm in the Asian storm **3**

Air France not being investor-friendly **3**

Airbus and Boeing slug it out with rampant price-cutting **4-7**

Politics drive German airport privatisation **8-9**

### Briefing

Will expansion spoil the Ryanair success story? **10-13**

Labour woes may hit bigger picture at Northwest **14-17**

### Management

The innovation gap: a co-operative solution? **18-19**

Macro-trends **20-21**

Micro-trends **22-23**

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# Aviation Strategy

## Analysis

But perhaps more importantly, Asia is becoming a proxy battleground for the global alliances. The Lufthansa/SIA interest in Thai was largely triggered by the possibility of BA/Qantas setting up a hub at Bangkok and also the likelihood of Thai quitting the Star alliance.

For American and Delta an important consideration is establishing Southeast Asian alliances to develop their connections beyond Tokyo, where they are gearing up transpacific operations following the completion of the liberal Japan-US bilateral. The competition is United and Northwest, which have extensive beyond rights from Tokyo. Northwest's possible connection with PAL could be regarded as a strategy to protect its Southeast Asian originated and destined traffic in the face of the new competition at Tokyo - Manila is the most westerly Asian hub from which non-stop service to the US can be offered.

Cathay could fulfil a different strategic aim for an allying or investing partner - a position in the main gateway to the China market. Also, the brand new airport at Chek Lap Kok is a major attraction (as is Sepang for those interested in MAS).

### Pitfalls abound

But just as there are opportunities for Western airlines so also are there major barriers and pitfalls.

First, no one is quite sure that the Asian traffic decline has touched bottom. The RPK numbers on this graph look horrendous enough, but there are further concerns about the state of the Japanese economy and the

repercussions of the fall of Suharto in Indonesia. Up to now intercontinental routes have held up fairly well while intra-regional traffic has collapsed, but the surge in transpacific frequencies offered by the US majors is threatening market balance in this sector.

Second, airlines should be extremely wary of entering business, cultural and governmental environments they are unfamiliar with (note the many failures in bridging national gaps in all-Western alliances).

To gain any sort of management control at Thai a Western airline would have to reach accommodation with the powerful air force faction in Bangkok. The plan whereby MAS Capital was to dispose of the airline's surplus assets was a very imaginative piece of financial engineering which now has been suspended.

To buy into Cathay would necessitate either Citic or the Swire Group diluting their shares - both remote possibilities. Korean and Asiana remain firmly entrenched in the chaebol system of highly-leveraged, cross-linked industrial conglomerates, which, although weakened, are resisting change to the bitter end.

Third, alliances do not solve the Asian carriers' immediate need for cash. Any funds that are invested will go to existing shareholders or governments. And the aircraft management role is being undertaken by the major leasing companies - GECAS and ILFC - which are very active in taking surplus aircraft off the Asian carriers and leasing them into Europe and America.

Many of the deals being concluded involve tying the Asian carriers into future new aircraft deals - when the delayed new aircraft orders are finally delivered these leasing companies will be the financiers.

Fourth, Asian airlines have their own ideas for resisting Western capitalist colonialism - intra-Asia alliances, for instance, or even longer term strategies for centring a global alliance in Asia (see *next story*).

### Aviation Strategy

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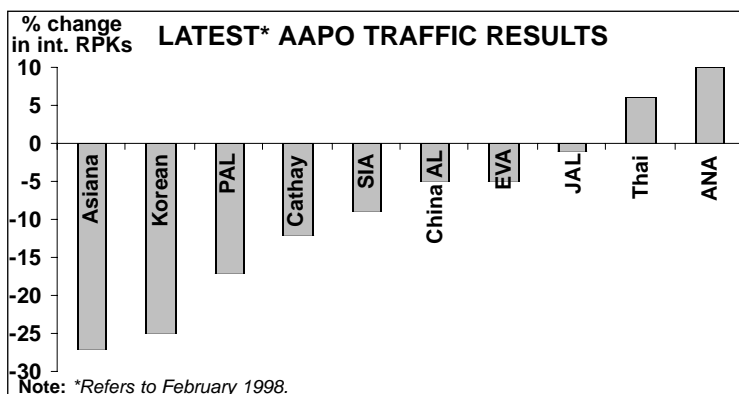
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# Aviation Strategy

## Analysis

### SIA: an island of calm in the Asian storm

Singapore Airlines too is affected by the Asian crisis but gives the impression that it will emerge more powerful than ever from the Asian turmoil.

Currently, SIA's stockmarket valuation at US\$7.2bn is 25% above that of Cathay, MAS, Thai and Korean combined - probably a realistic assessment of its position in the Asian market. Its net profit for 1997/98 was S\$1.17bn (US\$705m), roughly the same as the 1996/97 result, though this was due to a very strong first half performance.

SIA's management recognises the poor short term traffic and yield outlook but the airline was confident enough to order five firm plus five A340-500s for about \$2.2bn in May. With a concentration on long-haul routes it is less exposed to the regional depression. It may even be able to benefit from the economic crisis in Malaysia and the political crisis in Indonesia - Singapore is the natural hub for many services within Malaysia and within Indonesia.

SIA is contemplating alliances but certainly not as part of a rescue strategy. Following the dismantling of Global Excellence it signed an alliance with Lufthansa but has not enrolled in Star. An extensive codesharing agreement with Ansett/Air New Zealand is awaiting regulatory approval.

Speaking recently in the UK Dr Cheong Choong Kong, CEO of SIA, commented, rather enigmatically, on the prospects for SIA joining Star: "At this stage [that] would not be an illogical conclusion ... but not a foregone one." SIA gives the impression that its ambitions do not fit in with being just another Star member; rather it sees itself at the centre of a future Asia-based global alliance.

SIA's position in Asia is rather like what BA's used to be in Europe - a fully commercial, globally-orientated carrier surrounded by weak state-restrained competitors. And its recent demand for compensatory fifth freedom rights from London in order to operate transatlantic service from the UK was a clear message to European carriers that it will not be confined to its regional market.

### Air France not being investor-friendly

Air France and BA both produced their financial results for 1997/98 on the same day - May 27th. That should have afforded the possibility of some interesting comparisons. Unfortunately, the only relevant comparable numbers are those shown in this little box. Whereas BA produced its usual exhaustive accounts, Air France released some skimpy numbers and a few odd graphs but no detailed analysis.

This is a shame as Air France has a reasonable story to tell. It produced a profit for the first time in the 1990s and its profit margins on revenues were respectable. The main driver behind the turnaround from 1996/97 (when a net loss of \$25m was reported) was labour cost restraint - this cost item was actually slightly down on 1996/97. Capacity growth was restrained as well, pushing up the average passenger load factor to 75.2%.

The lack of "investor-friendliness" in Air France's approach again raises questions about

its preparedness for its part-privatisation, now scheduled for September. And there are more direct problems with its biggest single investor group - the pilots. Ex-Air Inter pilots demanding parity with their Air France colleagues are threatening strike action in the summer when the World Cup is being held in France.

Should this happen, Air France's image will again be dented, it will have to re-convince investors that its unions are committed to a commercial approach and it may be forced to accept a delay in its privatisation to the end of the year.

1997/98 FINANCIAL RESULTS (\$m)		
	Air France	British Airways
Revenues	10,222	14,144
Operating profit	415	825
Net profit	315	753
Operating margin	4.1%	5.8%
Net margin	3.1%	5.3%

# Aviation Strategy

## Analysis

### Airbus and Boeing slug it out with rampant price-cutting

A vicious market share war is hitting profitability at Airbus and Boeing. Here Richard Aboulafia from the Teal Group completes his analysis of the jet manufacturing industry (also see *Aviation Strategy*, May 1998) by looking at the fierce battle in the 100+ seat market.

With well over 2,500 jet aircraft on backlog and almost 800 scheduled for delivery in 1998, all the signs indicate that the industry has passed the high point of the classic boom/bust order cycle. Yet this has been a very unusual boom, as it happened all of a sudden. 1996 was expected to be a recovery year, not a peak year, but with well over 1,000 orders (898 net orders after cancellations) it turned into a near peak year (although 1997 matched it with just over 1,000 orders, or 940 orders after cancellations).

This recovery looks different. Airlines are not really queuing up to place orders. Rather, Boeing and Airbus are aggressively selling aircraft at a discount. Jet pricing has been extremely soft, which is unusual for an upturn. Boeing's 1996 list prices were frozen, and remained in place through 1997 - the first time this has occurred in a decade. Airbus list prices have also remained the same.

Anecdotal evidence suggests rampant discount pricing, with rumours of \$18m 737s and similar prices that usually indicate a buyer's market. Idiotically, the 737-300/400/500 is being forced off the market sooner than expected; in an example of intra-company predatory pricing, new 737-600/700/800s offer a superior enticement.

Boeing's endless production problems are yet another sign that this jet market upturn is unique. While some logistical problems are inevitable in an upturn, part of the problem could be the pricing pressure Boeing has applied to suppliers. Some suppliers have been unresponsive to calls for additional production capacity.

Boeing, perhaps, is re-learning the basic laws of supply and demand. Primes can pressure suppliers to cut prices in downturns, but passing discount pricing down to suppliers while asking them to ramp up production in an upturn does not work.

This largely premature and unprofitable upturn will result in future pain, and the battle for

market share may result in a massive oversupply of aircraft.

This market share war badly affects narrowbodies, but the Asia crisis - blithely ignored by the manufacturers - will hurt widebody demand too. Even with minimal up-front cancellations, follow-on buys and options will be slashed. And depressed prices for used aircraft, dumped by Asian carriers, will hurt everyone's balance sheet. There are some grim times coming, with a serious downturn after 2000 a major possibility

#### It didn't have to be like this

When Teal looked at this market in early 1996, we concluded that things had changed. Airline orders were increasingly small, incremental and placed on a take-as-needed basis, rather than in the enormous blocks of the past. Also, production cycle times had been slashed, allowing manufacturers to respond to these orders (and deferrals) with new flexibility. In short, if people behaved rationally, deliveries could have been timed to everyone's satisfaction, preventing a capacity glut and allowing the market's cycles to even out.

Sad to say, people have not changed. Both manufacturers and operators want to build and receive aircraft now. Both are frightened of losing market share. On the producer side in particular, Airbus is being aggressive because it wants to take MDC's market share; Boeing is being aggressive because it is trying to prevent Airbus from getting it and because it wants to shut Airbus out of some key customer markets. In 1997 Boeing won a key victory when Delta, the only major US MD-90 customer, signed for 737s. But given Airbus's fierce efforts to contest this order with A320s, we will probably never know what discounted price the airline eventually paid.

Of course, some of the current jet demand is the result of profitable airlines resuming aircraft purchases after a long hiatus. But much is the result of a vicious and unsustainable narrowbody share market war between Airbus and Boeing. This war has seen soft pricing and excessive, speculative, lessor orders - some 25% of 737-

# Aviation Strategy

## Analysis

600/700/800 orders have come from lessors. In all, Boeing's numerous write-offs - ostensibly related to production difficulties and closure of the Douglas production lines - probably hide myriad other sins.

Another interesting feature of the market today is the tendency of airlines to sign exclusivity agreements, committing themselves to one manufacturer in exchange for 'most favoured airline' jetliner prices - American's 1996 and Delta and Continental's 1997 agreements with Boeing, and US Airways' 1996/1997 agreement with Airbus are examples of this trend.

The ability to offer a complete family of aircraft, able to cover the entire 100-450 seat range, provides Boeing with a unique advantage. Airbus has little hope of creating a family of products with this breadth anytime soon. This is the main reason that Boeing will continue to be the foremost jet manufacturer, with a now-institutionalised 60-70% market share.

### Boeing - a permanent first

In 1994, Airbus made headlines when it equalled Boeing in terms of aircraft orders. However, 1995 was disastrous for Airbus and saw a return to Boeing dominance. And if that year is averaged with 1994, the combined numbers indicate the usual 65%-35% split in terms of dollar value. This ratio, again in terms of dollar value, continued in 1996 and 1997.

We expect that Boeing will be number one for the foreseeable future. Boeing has the largest sales base and product line, and the only unchallenged aircraft in the world - the 747. And thanks to the 1995 777-300 and 737-600 launches, 1996's 757-300 launch and 1997's 767-400ER and 737-900 launch, most of the company's currently planned aircraft programmes are underway.

Of course, being number one is tough work. In addition to the usual quality control, foreign relations, labour, sales and production line issues, Boeing must work on keeping its enormous product line current. The 737, 757, and 767 situation is solved, but the 747 needs stretching and updating. The 777 family badly needs the -200X and -300X very long-range variants to counter the A340-500/600. And any A3XX move must be co-opted or countered. A lot of work for one firm, but a lot of opportunities for subcontractors.

Now the bad news. The market share war hurt. Boeing kept its dominance over some key

customers, but instead of filling its financial coffers during this upturn, it is being drained. The company may find itself facing a particularly painful down-cycle without the cash reserves needed for new product development. And as Boeing heads into the downturn, it has been hit by a power struggle, pitting Harry Stonecipher against the Boeing establishment.

### Airbus - a permanent second

The Airbus consortium has risen from a one-product niche player to become the second greatest transport builder in the world. And in replacing MDC as the world's number two manufacturer, Airbus was the real victor in the battle for MDC's market share, even if Boeing bought the company.

But ultimately, Airbus is going to stay where it is. The A300/310 series will end by the early years of the next century, leaving the consortium with one narrowbody and one widebody family. Becoming a single corporate entity (SCE) will make Airbus more flexible and efficient, but it will not help it to expand its relatively limited product line.

Being an SCE could actually hurt. As the consortium's finances become more transparent, the two partners that care about return on equity (BAe and DASA) will demand just that. DASA chief Manfred Bischoff has already stated that discount pricing is seriously hurting DASA's profitability, and that 1998's results would be inferior to 1997's. For Airbus this will mean a greater emphasis on profitability, at the expense of market share and new product development - a major change.

MDC never really had a chance of survival. In an industry that increasingly favours consolidation, a niche player with inadequate new aircraft development plans was doomed for some time. The merger gives Boeing a better shot at controlling the aftermarket for the thousands of MDC aircraft still flying, but the new-build MDC jetliner business is on its way out.

In November 1997, Boeing officially killed the MD-80 and -90 narrowbodies, with production scheduled to end in 1999. The MD-11 widebody stayed alive, primarily as a freighter, and will last as long as the programme can garner enough orders to justify the cost of keeping the production line. This means two years at most.

Intriguingly, Boeing said it would pursue a dual-track approach with the MD-95, now graced

# Aviation Strategy

## Analysis

with the 717 moniker. On one hand, it will study smaller versions for the 80-100 seat market, which would not compete with the 108-seat 737-600. On the other hand, it said it would build the current 122-seat 717 model for its sole customer, AirTran. Probably, Boeing does not want the financial responsibility for killing the programme and is counting on the Airline Formerly Known As Valujet to default on its purchase. A second order, from Bavaria International Aircraft Leasing, is equally meaningless. The 80-100 seat versions will not go anywhere either.

As for the once-enormous Russian jet industry, only Ilyushin and Tupolev have products that can survive in a semi-open market. They should be able to make the Tu-204 and IL-96 projects semi-successful, at least at home. Production rates will stay relatively low.

### Narrowbodies

The 100-120 seat market now consists of the A319, 717, 737-500/600, and countless paper aircraft. These products have been fighting it out, making the most of a rather limited market. In 1995 and 1996 Airbus and Boeing got into 100/120-seater predatory pricing in a big way. Boeing sold SAS 737-600s for less than \$20m each, and Airbus offered its A319 to Valujet for similar prices. They are losing money, and they could not stop MDC from launching its MD95/717.

Concerning the post-Fokker 100-seat market there are two schools of thought. One is that Fokker's collapse is great news for BAe/Avro, Boeing and Airbus for the simple reason that they get to consume Fokker's market share. But the other school holds that Fokker operated according to the rules of the regional aircraft market, not the large jetliner market. In the former, producers artificially inflate demand by selling their products at a loss. Many regional aircraft (and Fokker) operators, if denied aircraft at marked-down prices, would opt for used aircraft - or not exist at all.

So, unless BAe and the rest agree to sell their 70-100 seaters at loss-making prices, much of Fokker's market will simply evaporate. However, enough demand (about half) will still be left to benefit the other products (the A319 and 737-600).

With regard to new narrowbody proposals, everyone has plans to develop products in this segment. Unfortunately, competition is especially fierce when the stakes are small. Aviation Industries of China (AVIC) wants to work with Airbus on its A316/317, and Airbus is willing if China agrees to pay for it. IPTN, having learned nothing from the N-250 debacle, has its N-2130. These projects are driven by techno-nationalist fantasies, not market realities. The A316/7 has the most chance of the lot - about 10%. Other Asia products stand no chance.

The narrowbody market segment is dominated by 130-160 seat trunkliners - the soon-to-be dead MD80/90 series, the 737-300/400 and -700/

<b>TEAL GROUP JET AIRCRAFT ORDER FORECAST</b>											
	1998	1999	2000	2001	2002	2003	2004	2006	2005	2007	Total
Airbus A300	6	6	6	6	4	-	-	-	-	-	28
Airbus A310	2	2	1	-	-	-	-	-	-	-	5
Airbus A319/320/321	175	236	206	136	78	60	74	136	126	122	1,349
Airbus A330	24	29	28	25	20	20	30	34	30	24	264
Airbus A340	22	20	17	16	13	15	16	11	10	10	150
Airbus A340-500/600	-	-	1	3	19	24	24	20	16	16	123
Boeing 717	2	1	-	-	-	-	-	-	-	-	3
Boeing 737-300/400/500	80	42	35	17	-	-	-	-	-	-	174
Boeing 737-600/700/800	158	204	180	131	94	80	110	142	130	125	1,354
Boeing 747-400	55	46	40	30	24	18	6	6	3	-	228
Boeing 747-400X	-	-	-	-	2	8	40	40	38	36	164
Boeing 757	50	44	42	36	36	54	44	52	56	50	464
Boeing 767	46	44	36	35	34	38	42	42	38	34	389
Boeing 777	66	58	44	48	48	56	60	62	56	50	548
Boeing MD-11	10	10	6	-	-	-	-	-	-	-	26
Boeing MD-80	10	14	8	-	-	-	-	-	-	-	32
Boeing MD-90	26	25	7	-	-	-	-	-	-	-	58
Ilyushin IL-96	6	6	10	10	12	12	12	12	12	12	104
Tupolev Tu-204	12	12	14	16	18	18	18	18	18	18	162
<b>TOTAL AIRBUS</b>	<b>229</b>	<b>293</b>	<b>259</b>	<b>186</b>	<b>134</b>	<b>119</b>	<b>144</b>	<b>201</b>	<b>182</b>	<b>172</b>	<b>1,919</b>
<b>TOTAL BOEING</b>	<b>503</b>	<b>488</b>	<b>398</b>	<b>297</b>	<b>238</b>	<b>254</b>	<b>302</b>	<b>344</b>	<b>321</b>	<b>295</b>	<b>3,440</b>
<b>TOTAL OTHER</b>	<b>18</b>	<b>18</b>	<b>24</b>	<b>26</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>266</b>
<b>TOTAL UNITS</b>	<b>750</b>	<b>799</b>	<b>681</b>	<b>509</b>	<b>402</b>	<b>403</b>	<b>476</b>	<b>575</b>	<b>533</b>	<b>497</b>	<b>5,625</b>

# Aviation Strategy

## Analysis

800/900 series, and the A320. The A320 has sold well, partially with the aid of financial sweeteners. Airbus aimed for market penetration first, and acquired an order book initially composed largely of leasing companies and financially strained airlines. Still, Airbus succeeded in displacing MDC in the trunkliner market and in establishing a viable competitor to Boeing.

Despite the A320, the 737 continues to sell better than anything else in its class. The newly-launched 737 Third Generation is competing successfully with the new-technology A320, thanks in part to a decision to emulate Airbus's sales tactics.

At the top end of the narrowbody market is the 757, now challenged by the A321. Both models have a choice of engines, which is good from the customer's point of view (financial incentives and offsets). The 757 has more service experience, range and capacity, and is 767-compatible. The A321 is cheaper to buy and operate and fits in with A320 and A340 fleets.

Fortunately, there is room for both programmes in this market, but the days of the 757's supremacy are over. It is also threatened by the growth of the 737-800, which can carry up to 189 passengers, and the new, even bigger 737-900. Boeing is stretching the 757, moving its market niche upward. The new 757-300 will replace the 767-200, which is dead anyway. For its size, the 757-300 stretch will offer excellent operating economics.

A third competitor in this class is Tupolev's Tu-204. Offered with Rolls-Royce engines and western avionics (and financing), the Tu-204 could take away some A321/757 market share in places like the Middle East.

## Widebodies

At the lower end are 220-260 seat widebodies such as the 767, A330-200, A300 and A310. Most of them will be overshadowed by their larger cousins, but it is still a viable segment.

Yet Airbus is partially abandoning this segment, even though this was Airbus's original market. The consortium's failure to update the A300 and A310 means it is counting on the A330-200 to do too much. The A330-200 is too expensive for many A300/310 routes, and the 767 looks set to inherit much of this segment. To keep the 767 relevant, and to help fight the A330-200, Boeing is developing its -400ER stretch, launched by Delta. The 767 will also benefit from military applications.

While the narrowbody competition is a source of ongoing carnage, the battle of the mini-jumbos has largely been decided. It has ended in a relatively even match - the 777 order book is slightly smaller than the combined A330 and A340 order books, but the average 777 customer is healthier, larger and more likely to place follow-on orders. The 777 also has the advantage of commonality - 15 airlines with 777 orders also operate 747-400s, and the two aircraft share a similar cockpit.

Despite the 777's success, Airbus has stolen a lead in the long-range mini-jumbo niche. In 1997 Airbus announced the A340-500 and -600. The ultra-long-range -500 will carry 313 passengers up to 8,300 miles. The -600, Europe's biggest aircraft yet, will carry 375 passengers up to 7,300 miles. The two new variants have been launched by orders from Air Canada and Virgin Atlantic and are efficient designs for Pacific routes that are too thin for a 747-400. Boeing's contender for the ultra-long segment, the 777-200X, remains unlaunched, with American the best hope for a launch order.

While Boeing has received more than 50 orders for the 777-300, which also seats 375-400 passengers, this design is currently limited to 5,700 miles. A proposed longer-ranged 777-300X has not been defined nor launched. There are few signs of progress, and it is possible that Boeing may abandon this niche market to Airbus.

The passenger MD-11 is dying, but Ilyushin's IL-96, which is available with western engines and avionics, has entered the market.

## The really large aircraft

Beyond the mini-jumbos, there is only one real jumbo jet - the 747. Production rates are quickly rebounding from their two-per-month trough. However, Boeing has cancelled its proposed 747-500/600 growth models, leaving the 747-400 in a tight range/payload spot, chased by the 777-300 (and maybe A340-600). It is just a matter of time before the 747-X concept is revived. All-new aircraft are too expensive, and the 747 needs to grow.

Airbus continues to talk about the A3XX, but funding is a problem. Airbus is unlikely to be able to raise the money with bonds and member governments will be unwilling to kick in most of the \$8-12bn needed. Even if it goes ahead, the A3XX is beyond the 2007 limit of our forecast, shown on the left.

### Politics drive German airport privatisation

Airport privatisation is on the agenda of several governments in 1998 (see *Aviation Strategy*, December 1997). With a decision due soon on the shortlist for privatisation of Berlin's airports, *Aviation Strategy* takes a close look at the privatisation drive in Germany.

The rationale for the federal government's decision is clear. The prospect of a doubling of air passengers to more than 200m by 2010, and a resultant need for investment exceeding DM20bn (\$11bn), is putting considerable physical and financial strain on Germany's airports. Although this figure is estimated, it includes DM7bn (\$4bn) already programmed and in part invested to meet demand by the turn of the century.

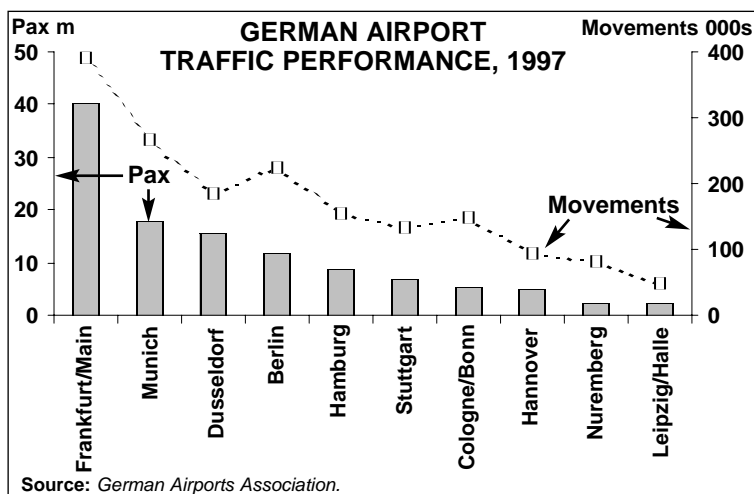
As things stand at present, it is the federal, local and city governments - effectively the taxpayers - that have to dig deep into their pockets. With an increasing number of other, more pressing priorities, it is no longer possible to finance the capital requirements necessary to meet the projected demand for air travel.

The writing has been on the wall for some time, in fact since the fall of the Berlin wall when Germany embarked on the long and hugely expensive process of re-unification, and it is the Berlin airport system which is at the heart of a new direction in airport ownership. Since the federal cabinet's decision on 28 November 1995 to initiate a total withdrawal from financial participa-

tion in airports, privatisation has become a hot topic in Germany, fuelled by the prospect of a new unified airport for Germany's new capital. But more than that, cutting off the public money supply, said Bundesminister for Transport Matthias Wissmann, is the essential prerequisite for airports to have the freedom and flexibility of making the decisions necessary to strengthen their position in the competitive marketplace.

Yet, in spite of the cabinet's decision, a reluctance to relinquish control still underlies public statements. It is clear that the federal government is keen to hang on to Germany's prized gateways of Frankfurt and Munich, at least as long as it can, saying that, because of their strategic importance as vital industrial and economic centres, they should not be allowed to go-it-alone. To underpin this policy the federal government has chosen Hamburg and Cologne, two of the five airports it still has minority stakes in, to serve as guinea pigs for privatisation. But local and city governments have stolen a march on the transport ministry in Bonn, and it was in fact Düsseldorf, owned in equal shares by the State of North Rhine-Westphalia and the City of Düsseldorf, which has become the front runner in the privatisation stakes.

The fact that it was the tragic fire in April 1996 that forced the owners of Düsseldorf Airport to go to the market early only reflects the realisation that large cash payments, either unforeseen or planned, can no longer be easily sold to the taxpayer. The resultant major reconstruction programme, together with its Airport 2000 expansion plan to increase capacity from the present 15m to 22m passengers, requires an investment of DM2bn (\$1.1bn). The State of North Rhine-Westphalia, therefore, put its 50% share up for sale and in October 1997 selected Harpen, a German real estate company, with Airport Group International (AGI) as the preferred bidder for the airport. Subsequently, however, the state, trying to squeeze more money out of the AGI/Harpen bid, re-opened negotiations with Hochtief, which it eventually won, paying DM370m (\$209m) for the half share, including some DM40m (\$23m) to the city for the lease of the airport land. Because the





# Aviation Strategy

## Analysis

share sale was tied to the lease of the land, parallel negotiations by Harpen/AGI with the City of Düsseldorf for its 50% stake came to nothing.

But the big prize is Berlin, and in spite of doubts that traffic levels may not generate an adequate return on investment, seven international consortia have beaten a path to the door of the debt-ridden Berlin Brandenburg Flughafen Holding (BBF). This has been whittled down to two and either one or both will be selected on 2 June 1998 to make a final bid. The winning consortium is expected to be announced in October, which would give Berlin the distinction of becoming the first fully-privatised airport in Germany. Investment bank BZW is handling the privatisation. The new owner will get a 50-year concession, for which he is expected to invest a sum of DM8bn (\$4.5bn) by 2007 to provide the new airport - a development of the former East Berlin Schönefeld facility - with a capacity for 20m passengers. The concession will also include taking over BBF's debts, thought to be around DM885m (\$499m) and, in parallel, run the existing three airports of Schönefeld, Tegel and Tempelhof until their closure.

### The usual suspects

There were no surprises among the interested parties, and they include most major airport companies that have successfully ventured into management abroad, among them the UK's BAA, Amsterdam Schiphol Airport, Aéroports de Paris (ADP), Aer Rianta of Ireland, and Vienna Airport. US company (AGI), which headed a consortium also including regional state bank WestLB, Berlin utility company Bewag and Parsons Engineering of the US, withdrew its bid in January. Following hard on the heels of the Düsseldorf fiasco, this would suggest that AGI is either disenchanted with German political machinations, or has changed its mind about the prospects offered in the German market. This may also be the reason for the recent withdrawal of the bid by the Copenhagen Airport/Commerzbank/Bechtel consortium, leaving just two.

These are still formidable, none more so than the Partner für Berlin und Brandenburg heavy-weight grouping of Hochtief, Flughafen Frankfurt Main, ABB and Siemens, which must be considered favourite. But the IVG/Vienna Airport/Dorsch/Dresdner Bank bid may have something

to say about that. Winning, however, could turn out to be a mixed blessing if the high expectations for Berlin prove to have been overplayed.

Crédit Suisse/First Boston has proposed a sell-off strategy for Hamburg-Fuhlsbüttel Airport in a report issued to the owners at the end of March 1998, but it is unlikely that the city's economic ministry will comment before the summer. On offer is a 50% stake, which includes the 26% federal holding, the 10% stake of the State of Schleswig-Holstein, and up to 14% of the city's holding. Present plans to implement the sell-off by the end of the year are regarded as over-optimistic. Interest has been expressed by Hochtief, BAA, Vienna, Copenhagen and Frankfurt. Interestingly, Cologne/Bonn is less enthusiastic about following the government line. The cities of Cologne and Bonn want to increase their combined stake from the present 37.18% to at least a majority 51% holding, citing the importance of the airport as the key to the economic development of the city and the region, as well as a job creator. The city councils argue that this aim is at odds with those of a private investor, whose main priority is earning money. The additional shares would come from both the federal government and the State of North Rhine-Westphalia, with the latter believed willing to sell this year.

Notwithstanding the federal government's intention of holding on to Munich, the city is in discussions with the Free State of Bavaria about the sale of its 23% holding in Germany's second biggest airport. Favourite is a listing on the stock exchange which, if agreement can be reached, could take place this year. But Munich will insist that any part privatisation ensures that the airport is developed to its full potential and that the privatisation motives match, to a large extent, the interests of the airport as an economic engine.

Hannover is in the midst of a DM269m (\$152m) expansion programme to be completed in time for Expo 2000. The airport's joint owners, the City of Hannover and the State of Lower Saxony, have contracted UBS in Frankfurt to advise on a partial privatisation, expected to take place after the Expo. Only a minor holding, amounting to 15% from each owner, will be made available in the form of an initial public offer.

This leaves Frankfurt, but the whole privatisation process could be turned upside down if, as is expected, another government takes office in the summer.

# Aviation Strategy

## Briefing

### Will expansion spoil the Ryanair success story?

Ryanair is Europe's original low fare, low-cost point-point scheduled airline. And, unlike most of the low-cost competitors that have followed, Ryanair is profitable. But can and will the airline keep to its successful strategy now that it is embarking on an ambitious expansion plan, with capacity increasing by 25% a year?

Ryanair's profitability derives from the adoption of a Southwest-type strategy in Europe. Although Ryanair was founded in 1985, the airline was loss-making until the current low-cost, no-frills strategy was introduced in 1991. At that time routes were cut from 23 to four, turboprops were replaced by jets, and routes were launched from London Stansted.

The effects were immediate, and today Dublin-based Ryanair is, for its size, one of Europe's most profitable airlines. In the 1997/98 financial year ending March 31, net profit is forecast by *Aviation Strategy* to top \$41m (15.3% of revenue) - see chart, right.

Until recently Ryanair had maintained a very low profile, seemingly happy to let the customers roll in and profits rack up. But the low-key approach changed in 1997 when Ryanair expanded outside UK and Ireland for the first time. Six 737-200s were added in 1997 to serve three new routes - Dublin to Paris (Beauvais) and Brussels (Charleroi) and London Stansted to Stockholm.

This, however, was just the start of a much larger expansion plan. A London-Oslo route was followed by six new routes out of Stansted starting in May/June 1998, to Venice, Malmo (Kristianstad), Pisa, Rimini, Lyon (St. Etienne) and Toulouse

(Carcassonne). This brings the total Ryanair network to 26 destinations in seven countries, centred on Dublin (14 routes) and Stansted (13 routes). In 1998 Ryanair forecasts it will carry 5m passengers.

But Ryanair's ambition does not stop there. In March 1998 the airline announced a firm order for 25 737-800s, with options for another 20. They will be delivered at a rate of five per year from March 1999 onwards, with the earliest optioned aircraft being available in 2001.

Some will replace 737-200s in order to increase capacity (but not frequency) on routes such as Dublin-Birmingham (allowing the -200s to switch to new routes), others will go to increase frequency (e.g. on Dublin-Cardiff) and others will go to new routes. According to Tim Jeans, Ryanair's commercial director, at least five new routes will start each year. In total, Ryanair's capacity will expand by 25% per year.

It is this massive order of 737s and its possible effects that begs the question: will capacity expansion - and the imperative to push the aircraft onto existing or new routes - tempt Ryanair to tinker with its successful strategy?

#### Low-cost bedrock

The key to Ryanair's strategy is a low cost base. Four items - aircraft equipment, employees, distribution and airport access, account for well over half of the airline's costs (see table, page 13).

Prior to the arrival of the 737-800s, Ryanair's fleet is composed solely of cheap, second-hand 737-200s. The 737-800s will be cheaper to operate on an operating cost/seat basis (fuel cost per seat will be 38% cheaper, for example) - but that does not include the cost of funding their purchase.

The firm orders cost approximately \$1.1bn at list prices, but Ryanair is likely to have negotiated a discount on this of at least

RYANAIR FLEET PLANS			
	Current fleet	Orders (options)	Delivery/retirement schedule/comments
737-200	20	0	
737-800	0	25 (20)	5 in 1999, 5 in 2000, 5 in 2001, 5 in 2002 and 5 in 2003
<b>TOTAL</b>	<b>20</b>	<b>25 (20)</b>	

# Aviation Strategy

## Briefing

20%. The aircraft will be financed via cash flow, commercial borrowings and equity (see page 13). Matthew Stainer from Morgan Stanley Dean Witter in London calculates that while the deliveries will cost \$175m per year (i.e. five aircraft at an estimated \$35m each), the airline will generate an average of \$114m in cash per year over the next four years. Given that Ryanair's cash reserves are relatively high (\$89m at December 31, 1997), and long-term debt is low (\$2.6m), the airline should have no problem in attracting all the equity/debt funding it needs.

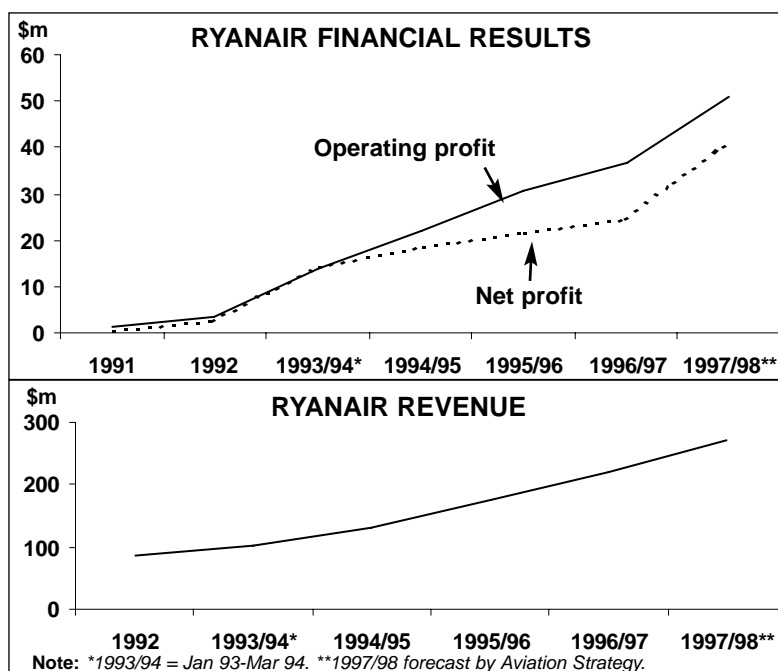
But there will be secondary effects, and the most important of these may be on personnel. Employees are a key component of Ryanair's low costs. Pay is linked to productivity incentives, which account for approximately two-thirds of an average flight attendant's pay and one-third of an average pilot's pay. (Ryanair has already planned for the loss of duty-free revenue by exploiting other in-flight revenue, such as telephone cards and rail tickets.)

Yet in the last quarter of 1997, excluding non-recurring bonuses, staff costs rose by 50% compared with the same quarter in 1996, reflecting an increase in staff to 956 from 679 as well as pay increases that were "ahead of the level set by national wage agreements", according to Ryanair.

Ryanair does not negotiate with unions, and until recently employee relations have been good. However, there are signs that this is changing. In January 1998 a dispute with baggage handlers over union recognition lead to work stoppages - a "painful lesson", according to Jeans.

Although the episode has now been settled, with Ryanair agreeing to take part in a government enquiry into the dispute, the direct cost to the airline was a one-off payment of IR£500 (\$730) made as a "thank you" to employees who continued to work normally. The dispute will knock up to \$1m off net profits in 1997/98.

This raises the question of whether the payment is truly a one-off. If it is, there is little to stop staff from pressing union recognition claims year after year. The indirect cost of the dispute in terms of labour relations may be even more costly. Ryanair is finding



out that while it takes a long time to build strong employer-employee ties, it often takes a much shorter period to undo them. The bonds that were built up in a small Irish family firm may not survive the discipline necessary for it to expand into a major European airline.

As more pilots, flight attendants and ground crew are taken on to serve the new 737-800s, personnel costs will keep rising, but expansion may also prompt a further drive by staff to get management to recognise unions.

Elsewhere, there is better news for Ryanair's low cost base - in distribution. The majority of sales are carried out by third-parties on multi-year contracts with fixed commission levels. Last year Ryanair cut the standard travel agent commission in Ireland and the UK from 9% to 7.5%, and despite a threatened boycott by some Irish travel agents, the reduction has been pushed through. However, Lunn Poly and Thomas Cook are still resisting in the UK.

But Ryanair is not stopping there. In 1996 the company set up Ryanair Direct, a reservations and data processing centre in Dublin. The centre has not only pushed up the proportion of tickets Ryanair sells direct to more than 30%, but under Irish taxation

# Aviation Strategy

## Briefing

law this subsidiary attracts a corporate tax rate of just 10%. This has had the effect of reducing Ryanair's overall tax rate from 33% to 25% in the last quarter of 1997.

For the immediate future there will still be a role for distribution via agents, says Jeans, particularly if they add value. But Ryanair is now also looking at Internet distribution. The airlines will launch a web site this summer, and it is also examining several possible Internet distribution systems.

As for airport charges, so far there are no indications that secondary airports are starting to claw back any significant margin from Ryanair. Indeed Ryanair often wins key first-mover advantages by securing access to secondary airports at cheap rates. Sometimes Ryanair secures access to airports for free, or gets the airport operator to subsidise the airline. However, operators of an airport 'discovered' by Ryanair often tend to demand higher fees from each succeeding airline that wants to launch services.

### Simple and effective route structure

Ryanair concentrates on short-haul, point-to-point services that link popular destinations via secondary airports. There are therefore no through-service costs, and connecting traffic is minimal. But as capacity comes onstream, will Ryanair keep to this formula? The number of routes where a cosy duopoly could be shaken up by Ryanair's low fares is considerable (particularly as Ryanair's fares are up to 80% cheaper than the established airlines' fares) - but the number of these that can be served via

secondary airports is limited. Already Ryanair appears to be stretching the concept of serving airports close to population centres. St. Etienne is 55km from Lyon and Carcassonne is 90km from Toulouse.

Ryanair argues that it can find suitable routes to put the 737-800s on, and that in any case once the airline enters a route its fares and service concept will engender the so-called 'Ryanair effect' - the phenomenon where passenger traffic booms once Ryanair enters a particular route (see chart, below). This effect may be overstated, however; increasing demand on Ryanair routes out of Dublin was partly a factor of the buoyant Irish economy in the early 1990s and an inbound tourism boom from the UK.

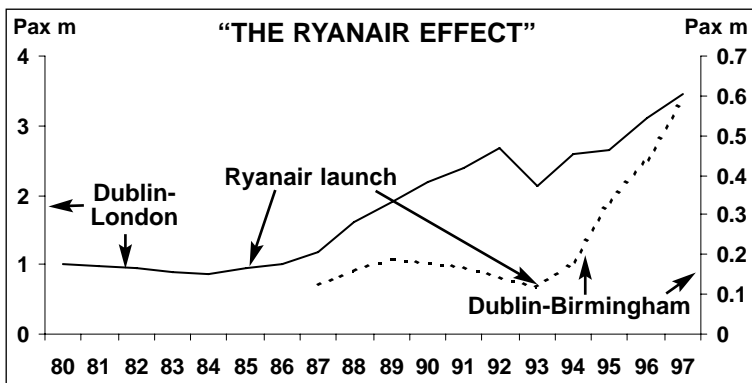
Of course Ryanair's low fares policy was also a factor, as low fares attracted leisure passengers who until then did not fly (preferring coach, car or train), or did not travel at all.

Ryanair selects routes based on two main criteria, says Jeans. The first is location - each end must be close to major markets - and the second is a low cost operating environment. So, providing that they are close to major population centres, secondary airports will remain at the heart of Ryanair route expansion. "Another reason we have not been drawn to primary airports is because leisure travellers flying with bargain fares are relatively time insensitive," says Jeans. "And that is why we will stick to the knitting."

On the other hand, Jeans adds, Ryanair does not want to over-analyse routes. The airline has started many routes that no-one thought viable (e.g. Dublin-Bournemouth), but so far Ryanair has an unbroken record of success.

This begs the question just how the airline *will* react when an inevitable route failure does come? Will the airline accept the situation as a one-off and keep to its strategy, or would a series of failures entice the airline into trying something different - flying from primary airports for example?

Assuming Ryanair keeps to its stated strategy, the role of Stansted will become more pronounced. Jeans says: "Stansted is a node for us - not a hub. But by sheer weight of city pairings, people will start to connect through Stansted. There is big



# Aviation Strategy

## Briefing

demand for connections at some of the spokes already, but at present development of the hub-and-spoke concept is not part of our strategy - although it is not ruled out for the future". Much more likely in the medium-term is the development of another node, so that Ryanair can then begin to "triangulate the network", says Jeans. But this sounds like the beginning of a hub structure by another name.

### A busy future

Ryanair had been 100% controlled by its founders, the Ryan family, until June 1996, when Irish Air (controlled by David Bondermann) and Michael O'Leary (the chief executive) bought a 19.9% stake and 17.9% stake respectively. The Ryan family stake was further diluted in 1997 when Ryanair was floated in Dublin and New York (NASDAQ) at a value of \$500m. In Ireland an issue of shares equivalent to 34% of the total was 20 times over-subscribed. Although the airline is now part of Ryanair Holdings, the Ryan family owns 35.5%, Irish Air 14.6% and O'Leary 14.1%.

Ryanair now plans to list in London (perhaps as soon as this year), at the same raising around £50m sterling. According to Jeans, this will "broaden the shareholder base, and help pay for the new aircraft". Inevitably, this will bring further scrutiny of the airline - but Jeans says management is aware of this and will accept it - and scrutiny is "good publicity" anyway.

But even if Ryanair sticks to the knitting, the main factor the airline seems not to have factored into its calculation is competition. If successful, Go is likely to be the first of many low-cost subsidiaries launched by Europe's major airlines. For example, Virgin Atlantic is reported to be contemplating a low-cost airline at Stansted, possibly combining Virgin Express with an acquired airline. In any case Virgin Express is looking at Stansted as another possible hub.

Yet Ryanair seems somewhat relaxed about the prospect of similar low-cost, no-frills competitors. "Price is our key strength because we believe we have the lowest cost base around", says Jeans. "And, faced with

competition, we will do what we have to". This is a direct warning to Go at Stansted, yet while BA's subsidiary will (for now) avoid any direct challenge to Ryanair, if any fare war did occur then surely Go would have more resources than Ryanair.

On the other hand, it is easy to be too critical of an airline that - unlike many of its rivals - is making a steady stream of profits. It may even be underexploiting one of its key assets - its brand. Outside Ireland and the UK, the Ryanair brand is little known among the flying public and brand promotion is dismissed by the airline as not being applicable to the low-fare leisure market. That is a risky assumption, and as more and more low-cost competitors arrive in Europe it may be foolish to rely on price alone as the key to demand.

But the main danger for Ryanair remains that management becomes impatient with its steady expansion plans and is tempted to try primary airports as an experiment. This would entail higher costs and be the first step towards dismantling a successful strategy. According to Jeans this will not happen - expansion will be at Ryanair's own pace, the airline will not depart from its successful formula, and management is determined not to become complacent. Observers will be watching closely to see if Ryanair does indeed keep these promises.

<b>RYANAIR REVENUE &amp; COST BREAKDOWN (%)</b>				
	<b>95/96</b>	<b>95/96</b>	<b>96/97</b>	<b>96/97</b>
	<b>\$m</b>	<b>%</b>	<b>\$m</b>	<b>%</b>
<b>Revenues</b>				
<b>Scheduled</b>	146.2	82.8	193.0	88.2
<b>Non-flight scheduled</b>	1.9	1.1	2.4	1.1
<b>Charter</b>	15.2	8.6	7.7	3.5
<b>Cargo</b>	0.4	0.2	0.4	0.2
<b>In-flight sales</b>	10.2	5.8	11.6	5.3
<b>Car hire</b>	2.6	1.5	3.7	1.7
	<b>176.6</b>	<b>100.0</b>	<b>218.7</b>	<b>100.0</b>
<b>Costs</b>				
<b>Employees</b>	34.1	19.3	40.3	18.4
<b>Airport charges</b>	21.0	11.9	25.2	11.5
<b>Maintenance</b>	18.4	10.4	18.6	8.5
<b>Fuel</b>	16.8	9.5	22.1	10.1
<b>Marketing/distribution</b>	16.4	9.3	22.8	10.4
<b>Route charges</b>	10.2	5.8	12.5	5.7
<b>Depreciation</b>	8.5	4.8	10.7	4.9
<b>Aircraft rentals</b>	3.5	2.0	9.8	4.5
<b>Other costs</b>	17.0	9.6	18.8	8.6
	<b>145.9</b>	<b>82.6</b>	<b>180.8</b>	<b>82.6</b>

# Aviation Strategy

## Briefing

### Labour woes may hit bigger picture at Northwest

Northwest is focusing its efforts on implementing the virtual merger with Continental and expanding the global alliance in Asia. But there is serious trouble on the labour front, which could lead to strikes, inability to codeshare in the domestic market or a substantial hike in labour costs. How will the carrier balance the interests of its workforce and the need to secure strategic growth opportunities?

Northwest has come a long way since its near-bankruptcy in 1993, when it was burdened with \$5bn-plus of debt and could not meet a scheduled debt repayment. A Chapter 11 filing was averted only thanks to a last-minute financial restructuring, which included an \$886m three-year package of labour concessions in return for a 25% equity stake for employees, and a subsequent reduction and refinancing of the bulk of its debt.

Since its spectacular turnaround in 1994, Northwest has earned net profits totalling \$1.9bn. It is one of the most efficient US carriers, with profit margins that have consistently been among the best in the industry.

For 1997 the company posted an operating profit of \$1.2bn and a net profit of \$597m, representing 11.3% and 5.8% of revenues. The balance sheet has also strengthened considerably. Long-term debt and capital leases fell from \$5.4bn at the end of 1993 to \$2.8bn at the end of

1997, while total assets rose from \$7.6bn to \$9.3bn. At the end of March, Northwest had an ample \$1.1bn in unrestricted cash and short-term investments and total available liquidity of \$2.2bn.

Northwest should have no difficulty meeting the now evenly spread-out debt repayments and funding strategic investments. On May 1 it repurchased KLM's remaining holding of 18.2m of its common shares, which was originally due to take place in tranches over a three-year period, for \$780m. This was paid with a combination of \$337m cash and senior unsecured notes due over three years.

At this stage Northwest hopes to complete its \$519m proposed purchase of a 15.4% stake in Continental by the end of 1998. It expects to pay \$367m in cash and issue 4.2m new common shares. To restore liquidity, in May the company secured an additional \$1bn revolving credit facility.

Northwest never had a clearly-defined cost-cutting programme in place, but the 1993 wage concessions were followed by a fairly extensive restructuring of the route system. This and better cost controls enabled unit costs to be lowered. Last year Northwest's costs per ASM, at 8.63 cents (excluding freighters), were the lowest among the large majors. This was achieved despite the fact that the wages of Northwest's workers snapped back to the August 1993 pre-concession levels during the second half of 1996. However, since the company was then able to stop issuing common and preferred stock to employees (a practice that had been recorded as huge non-cash operating cost items), the net impact on the profit and loss account was not that detrimental (salaries and wages rose by \$314.5m or 11.6% in 1997, compared with a \$242.8m non-cash stock payment in 1996).

The airline was lucky in that its route system had minimal exposure to Continental Lite or the new entrant low-cost operators that wreaked havoc on other major carriers' yields a few years ago. Service enhancements, better yield management and focus on stronger markets led to steady yield improvements. In recent years Northwest has maintained a domestic unit revenue premium over its main competitors,

#### NORTHWEST FLEET PLANS

	Current fleet	Orders (options)	Delivery/retirement schedule
727-200	40	0	To be replaced by A320s
747-100	3	0	
747-200B	22	0	To be replaced by 747-400s
747-200F	8	0	
747-400	10	4	
757-200	48	25	
MD-82	8	0	To be replaced by A319s
DC-10-30	15	0	
DC-10-40	21	0	
DC-9-10	19	0	
DC-9-30	113	0	
DC-9-41	12	0	
DC-9-51	35	0	
A319	0	50 (100)	10 per year 1998-2002
A320-200	52	18	
A330-300	0	16	8 in 2003, 8 in 2004
<b>TOTAL</b>	<b>406</b>	<b>113 (100)</b>	

# Aviation Strategy

## Briefing

although its overall yield has deteriorated recently largely because of the Asian crisis.

One major concern is that, over the past two years, Northwest has slipped seriously in the DoT's service quality and punctuality rankings and earned low marks in customer surveys. It used to be among the highest-rated carriers in terms of service standards. The lapses have been blamed on a multitude of factors, including lack of terminal capacity at the main Detroit hub, the high maintenance requirements of DC-9s, faulty airport equipment, poor scheduling, a shortage of pilots and low staff morale.

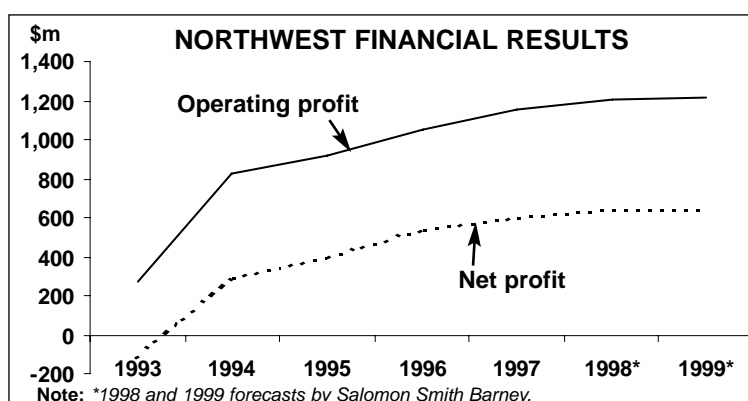
The proposed link-up with Continental, which now has the industry's best service standards and on-time performance, has added new urgency to Northwest's efforts to rectify the problems - after all, the idea behind the alliance is to offer a seamless service. The carrier is now trying to improve and overhaul everything from facilities and equipment to training programmes.

## Impact of the Asian crisis and the new Japan-US ASA

The Asian economic crisis has so far had little visible impact on Northwest's overall financial results, even though the carrier derives about 30% of its revenues from Pacific operations. Net earnings quadrupled in the fourth quarter of 1997 and rose by 10% in the March 1998 quarter because the weakened demand on the Pacific was offset by exceptionally strong domestic and North Atlantic demand, and lower fuel prices.

Northwest was more prepared for the situation than, for example, United, because it had been experiencing problems on the Pacific for a couple of years due to overcapacity and reduced demand from Japanese tourists (a result of Japan's lengthy recession and a weaker yen). In any case, the Asian Tigers generate less than 18% of Northwest's Pacific revenue (i.e. only about 5% of its total revenue). About half of the Pacific sales originate in Japan and 31% are generated in North America, where Asian business travel is holding fairly well in support of US exports.

The airline roughly broke even on the Pacific routes last year, following \$94.2m and \$96.7m operating profits in 1996 and 1995 respectively. However, the situation worsened in the March quarter, when Pacific passenger revenues fell by 12.6% and the yield plummeted by 10.5%. This was large-



ly blamed on the economic softening in Japan and a further weakening of the yen, which led to a 10% decline in Japanese tourist arrivals in the US.

Northwest now expects an operating loss for the Pacific in 1998, though it is trying to limit the damage with service reductions. Among other things, it has cut capacity between Japan and the beach markets of Guam and Hawaii by 10% and eliminated its three-per-week Detroit-Seoul service. However, stronger markets elsewhere have absorbed the capacity and, within Asia, China remains a bright spot (an additional weekly Detroit-Beijing flight was added in April).

To make matters worse for Northwest, the new liberal US-Japan bilateral, signed on January 30, has opened up the routes to substantial additional competition. American, Continental and Delta have received 76 new weekly frequencies, while TWA will enter the market with 14 weekly codeshare flights with Delta. It is mind-boggling that all this expansion is taking place at a time when the Japanese economy is plunging further into recession, but the airlines have been clamouring for access to those prestigious markets for a long time.

Northwest's initial response has been to suspend operations on the profitable Chicago-Tokyo route, mainly in response to American's and United's new or planned services from their hub. However, the combination of Northwest's existing dominance and various provisions in the new ASA should ensure that it retains a strong position in the Pacific market.

Northwest was one of only two US carriers (the other one was United) to secure unlimited rights to fly between any US and any Japanese point. It has now launched a new Minneapolis-Osaka service and introduced a second daily flight on the Minneapolis-Tokyo route. It will begin Detroit-Nagoya nonstops (linking the world's two

# Aviation Strategy

## Briefing

largest car manufacturing centres) and Los Angeles-Tokyo flights in early June.

This will be followed by a seasonal Tokyo-Anchorage service, which aims to attract leisure traffic to Alaska from all around Asia. Northwest's existing codeshare partner Alaska Airlines will offer connections from Anchorage to the West coast, providing opportunities for Asian tourists to visit multiple US cities.

The new ASA also confirmed Northwest's fifth freedom rights to serve any point in Asia beyond Japan (previously Japan did not always respect those rights). It currently serves nine Asian cities via Tokyo Narita, where it is the second largest carrier (after JAL) with 316 weekly slots. But because of slot constraints at Narita, growth now focuses on Osaka where Northwest is already the largest carrier.

The new ASA ensures that Northwest will retain its existing slots at Narita and Kansai and get its fair share of new slots when second runways are built. Northwest's important all-cargo services between the US and Japan and beyond will benefit from increased operational flexibility.

And, significantly, the bilateral provides opportunities for codesharing with US and Japanese partners, as well as with other Asian carriers to third countries.

### Mature relationship with KLM

The equity relationship between KLM and Northwest was never a happy one, and in 1995 KLM sued Northwest in US courts for breach of agreement after Northwest adopted anti-takeover defences. The two-year legal squabble, which the two always viewed as an independent dispute that should not get in the way of service expansion, was amicably settled in August 1997 when KLM agreed to sell its 19% stake back to Northwest (see KLM Briefing, *Aviation Strategy* May 1998).

The alliance itself has been a commercial and financial success, generating annual profits of around \$50m for Northwest and \$150m for KLM. It has enabled the carriers to initiate and expand service on many transatlantic sectors that neither could operate profitably on their own. Atlantic service and traffic doubled between 1993 and 1997. Joint or codeshare services now link 14 US cities with Amsterdam and those gateways with 150-plus beyond-points in the US and 70-plus in Europe, Middle East, Africa and India.

The settlement of the ownership dispute led to the signing of an expanded ten-year global joint venture agreement in September 1997. This called for increased co-operation on the Atlantic and in Canada and Mexico, as well as closer co-ordination of air freight divisions, computer systems, marketing and other functions. As a result, Northwest has assumed responsibility for KLM's marketing, sales and operations in North America and Mexico, while KLM is reciprocating on the European side. The two have also introduced new codeshare services linking Seattle and Philadelphia with Amsterdam.

### Virtual merger with Continental

Northwest's strategic efforts now focus on developing co-operation with Continental, following the signing of the alliance agreement on January 26. The two propose to connect their networks through extensive codesharing, FFP links and suchlike, and the deal also envisages co-operation between Continental and KLM.

The idea behind this "virtual merger" and the similar alliances subsequently forged by American and US Airways and Delta and United is to get many of the benefits of mergers without the hassles. But the Northwest deal differs from the others in that it involves an equity link and therefore is subject to formal antitrust review by the Justice Department.

Northwest's acquisition of Air Partners' 15.4% stake will represent 50.4% of Continental's fully diluted voting stock. But the shares will be placed in a trust and Northwest has agreed not to use its voting rights except in certain limited circumstances. The absence of control is important to avoid a transfer of international route rights.

Northwest and Continental are now in the process of linking up their FFPs. The rest of the deal will face tough regulatory scrutiny (also by the DoT), which could be a lengthy process. On the one hand, there's very little route overlap (only seven nonstop routes). On the other hand, there are serious concerns in Washington about growing industry concentration, hub domination and predatory behaviour by the majors.

The carriers also need to secure the approval of their pilots' unions, whose contracts give them veto power over domestic codesharing. The situation is particularly serious at Northwest, where the pilots have tied the approval of codesharing to the



# Aviation Strategy

## Briefing

successful conclusion of new contract negotiations that have dragged on for more than 18 months.

The alliance offers few cost savings since separate managements, employees and fleets will be retained and there will be no workforce reductions or hub closures. Economic benefits will arise mainly from increased revenue through new city pairs and connection opportunities.

However, the benefits will probably fall well short of the initially estimated \$500m aggregate annual pre-tax income now that the main competitors are forming their own alliances.

Northwest will benefit from access to Continental's markets in the South and the Northeast - particularly the Houston and Newark hubs, where Continental still has good growth opportunities. By contrast, Northwest has already maximised the use of its Detroit and Minneapolis/St. Paul hubs.

The deal will give Northwest access to Latin America, where it is non-existent and where Continental has grown extensively in recent years. The ability to codeshare in Asian markets will also be useful as competition intensifies and Asian economic woes continue. The DoT has authorised the two to codeshare on services linking Detroit, San Francisco and Los Angeles with Tokyo and Osaka.

The alliance with Continental should also further cement Northwest's relationship with KLM, which recently secured Alitalia as its south Europe partner and will now gain additional access to the southern part of the US and Latin America.

### Search for Asian partners

In a rather nice move to cement the new domestic link-ups and fill the Asia gap in the global alliance, in mid-May Northwest and its three US partners (Continental, America West and Alaska) simultaneously signed codeshare and marketing agreements with Air China. The five-airline combine will account for 65.6% of the US-China non-stop market and thus be much larger than the alliances recently signed by American with China Eastern and Delta with China Southern.

The deal will involve multiple gateways on both US coasts and all around China, plus Northwest's Tokyo and Osaka hubs. Northwest and Air China will codeshare on US-China and domestic sectors and will also connect in Japan. Continental will gain access to China and its main role will be to feed traffic through Newark and provide Air China

access to Latin America. Alaska is expected to boost its service via Seattle, while America West will focus on the West coast to Las Vegas sectors.

This will secure Northwest's presence in a major future growth market, while existing code-share partner JAS will help the carrier penetrate Japan and the rest of Northeast Asia. However, Southeast Asia remains a major gap to be filled. Northwest's leadership recently indicated that talks have been held with various Southeast Asian carriers, that an equity stake would be considered if necessary, and that multiple-airline signings (with the US partners at least) are possible.

### Unstable labour situation

But Northwest's biggest immediate challenge is to secure new agreements with its unions. Contracts with the main labour groups have been open since the autumn of 1996 and talks have not made progress on economic and job security issues despite the involvement of federal mediators in the ALPA and IAM negotiations.

The unions are pressing for sizeable pay increases (after all, their pay is still at 1992 levels) and are becoming increasingly agitated about the management's requests for work-rule changes and other "unacceptable" conditions. In April the pilots were reportedly also asked to agree to the setting up of a low-cost division, dubbed N2, which would involve 10% pay reductions for up to 40% of the pilots who currently fly narrowbody aircraft - something that the union refused to consider.

An intensive ten-day round of talks with ALPA ended in mid-May without any progress and a strike remains a possibility (if the federal mediator declares an impasse and after a 30-day cooling-off period expires). Over the past month the pilots have been conducting informational picketing at key airports, while work slowdowns by machinists have led to some flight delays and cancellations.

Northwest is the only one of the US majors still facing problems of this magnitude with its unions - and both ALPA and IAM have board seats. The situation does not bode well for pilot approval of the domestic codesharing part of the Continental alliance, though many of the benefits would probably be realised without domestic codesharing. The labour strife is certainly making it harder for Northwest to bring its service quality up to its partner's standards, and its competitive position is clearly at risk.

By Heini Nuutinen

# Aviation Strategy

## Management

### The innovation gap: a co-operative solution?

Innovation is at the heart of every global industry - but aviation seems to be an exception to this rule. Louis Gialloredo takes a look at the current aviation innovation gap and examines what solutions may be available to the industry.

Initially, innovation in the aviation industry was primarily technology-driven - and technological improvement continued as the basis of innovation until the mid-1970s, when it was the turn of management technique to take over. Through the 1980s this led to ideas such as frequent user schemes, capacity and asset optimisation models and even a focus on cost consciousness.

#### The barren 1990s

But enter the 1990s and it is difficult to spot a major trend in innovation, with the possible exception of electronic ticketing.

Indeed, it can be argued that the aviation industry is stuck in a period of managerial complacency in terms of innovation. Economic upturn tends to foster complacency anyway, and globally we have yet to see an innovative breakthrough that has been present in other decades. But just how much of an innovation gap is there?

One way of answering this question is to examine the innovations that have been seen at other industries during the 1990s. These have included the following developments:

- The creation of cyclical management strategies;
- Development of consistently high quality service products;
- Re-personalisation of the service process;
- The recession-proofing of assets and customers;
- A reassessment of alliances as being a long-term rather than a short-term strategic option; and
- The adoption of new relationships between users and makers of assets.

To some extent or another airlines are considering these issues. But their approach tends to be incremental rather than revolutionary.

Perhaps for airlines that have embraced so much change in the 1980s and 1990s, a period of refinement and optimisation is necessary. We are, after all, seeing second, third and fourth generation FFPs, yield management and scheduling systems, among others. And indeed some airlines *are* achieving success by simply applying incremental conventional strategies in the areas of branding, capacity & asset optimisation and logistics etc.

#### Incrementalism versus evolution

But is this enough? The major concern is that if all innovation is constrained to an evolutionary process, where will the next major breakthrough come from? Incrementalism is fine as long as original and revolutionary activities (or so-called pure research) are taking place somewhere else in the airline - but that is rarely the case, even in the most sophisticated airlines.

Other commentators have come to the conclusion that anything other than the targeted application of research (i.e. incrementalism) is no longer affordable in an industry where thin margins are the maximum rewards for the chosen few during even the good times.

Is there a solution to this fundamental conundrum? Undoubtedly there is, and by looking at the way other industries have handled innovation, airlines may be able to exploit alternative strategies.

The first lesson to be learned is that innovation must be developed and launched quickly into a market in order to produce some chance of a sustainable competitive advantage. The cost of innovation has to be

# Aviation Strategy

## Management

capitalised and funded in the period prior to effective amortisation, thus raising another barrier to entry to under-funded market pioneer aspirants.

### A co-operative strategy

Bearing this point in mind, an appropriate model from which to draw some lessons is the concept of co-operation. In hi-tech, consumer electronic and an increasing number of manufacturing-based sectors, co-operative research has often produced breakthroughs that are then commercialised in differing fashions by various industry players.

The co-operative model is one of the reasons that the Japanese have (until recently) been able to stay one step ahead of other competitors, who either each individually spend a huge proportion of revenue on research or else go without.

From the experience of other industries, it does seem that a co-operative approach to innovation pays dividends, but the key question is - could this also work for airlines?

### A lesson for airlines?

Airlines do not have to look far for a model of co-operation that directly impacts them - namely, the aircraft and aviation systems manufacturers that are sharing research and development among larger and larger pools of aligned players.

Perhaps, therefore, some of the emerging global alliances could at least split funding of innovation between partners (as has already taken place in an initial form at the Star alliance)?

However, there remain major obstacles to this theory becoming practice. In an aviation alliance, even when the innovation effort is shared and co-ordinated, airlines must have complete faith in the alliance in order to allow an innovation they have thought up to be maximised commercially by other airlines. They must also believe that successful innovation elsewhere will be quickly distributed to other alliance partners.

The strength and depth of the alliance is key. The R&D workload can only be shared among an alliance of airlines - allowing each

particular carrier to pursue one avenue of innovation - if each airline not only trusts its partners, but is also confident that the rewards of successful innovation will flow back to it as well.

The reverse of this is the problem of innovation failure. If an airline tries out a new concept and it fails, will the financial cost of failure be spread among all the airlines in an alliance? If not, the airline may be reluctant to search for innovations. And even more important than financial cost is loss of face. If a small airline tries an innovation and it fails, financial recompense may not be enough to overcome the blow of failure. It is much easier for a 100% owned subsidiary to experiment with a new concept because 100% of the risk (and return) is carried by the parent.

And then there is the problem of co-ordination. The alliance must ensure that innovation effort is not duplicated, or that airlines ignore riskier innovation efforts and leave them to other alliance members. In an alliance where innovation effort is shared, airlines may be tempted to concentrate on innovations which are most likely to be adopted by others, at the cost of ignoring areas which appear more risky but may well prove to give greater rewards. Co-ordination of innovation on a long-term basis is therefore essential.

Even if an innovation is successful, it must be realised that alliance partners may not want to adopt it, or may not be capable of adopting it for themselves. For example, there is little doubt that Virgin's innovative service and Upper Class pitch has been very successful. But in a codeshare or alliance situation, very few airlines would want to standardise their service concept with Virgin.

Yet despite all these potential problems, it is probable that a co-operative system would provide innovation at a lower cost per airline and allow quicker, cheaper access to the benefits of being first in. For aviation, whether this co-operative approach to growth occurs within mega-alliance groups or on an industry-wide consortium basis remains to be seen.

But what is certain is that without some kind of co-operative effort, the innovation gap between aviation and other industries will continue.

# 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	
March 98	15.0	9.5	63.2	14.4	11.5	80.2	11.4	8.7	76.4	35.8	28.0	78.1	53.3	39.1	73.3	
Ann. chng	7.4%	6.7%	-0.4	8.0%	6.8%	-0.9	8.0%	4.8%	-2.3	8.5%	6.6%	-1.4	8.0%	6.3%	-1.2	
Jan-Mar 98	43.2	24.9	57.6	40.9	29.1	71.2	33.2	24.5	73.8	103.9	76.5	73.7	154.1	105.7	68.6	
Ann. chng	7.8%	9.5%	0.9	8.8%	7.1%	-1.1	8.5%	5.8%	-1.9	9.3%	7.3%	-1.4	8.8%	7.5%	-0.8	

Source: AEA.

US MAJORS' SCHEDULED TRAFFIC																
	Domestic			North Atlantic			Pacific			Latin America			Total international			
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	
1990	863.1	523.2	60.6	121.3	84.2	69.4	106.7	75.8	71.0	42.2	26.6	63.0	270.2	186.5	69.0	
1991	835.1	512.7	61.4	108.0	75.2	69.6	117.0	78.5	67.1	44.3	27.4	61.8	269.2	181.0	67.2	
1992	857.8	536.9	62.6	134.4	92.4	68.7	123.1	85.0	69.0	48.0	27.4	57.0	305.4	204.7	67.0	
1993	867.7	538.5	62.1	140.3	97.0	69.2	112.5	79.7	70.8	55.8	32.5	58.2	308.7	209.2	67.8	
1994	886.9	575.6	64.9	136.1	99.5	73.0	107.3	78.2	72.9	56.8	35.2	62.0	300.3	212.9	70.9	
1995	900.4	591.4	65.7	130.4	98.5	75.6	114.3	83.7	73.2	62.1	39.1	63.0	306.7	221.3	72.1	
1996	925.7	634.4	68.5	132.6	101.9	76.8	118.0	89.2	75.6	66.1	42.3	64.0	316.7	233.3	73.7	
1997	953.3	663.7	69.6	103.2*	82.7*	80.1*	92.0*	69.5*	75.5*	52.4*	34.7*	66.2*	331.2	246.5	74.4	
March 98	81.6	58.6	71.9										28.0	20.8	74.2	
Ann. chng	0.9%	0.0%	-0.6										5.0%	1.5%	-2.6	
Jan-Mar 98	234.0	156.3	66.8										82.3	57.7	70.1	
Ann. chng	0.8%	0.3%	-0.3%										6.4%	3.3%	-2.1%	

Note: US Majors = American, Alaska, Am. West, Continental, Delta, NWA, Southwest, TWA, United, USAir. \*Jan-Sep 97 only. 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 %	
1990	1,270	795	62.6	1,527	1,062	69.5	2,797	1,857	66.4	5.8	5.0	9.4	8.9	7.8	7.0	
1991	1,267	800	63.2	1,487	998	67.1	2,754	1,798	65.3	-0.3	0.6	-2.6	-6.1	-1.6	-3.2	
1992	1,300	840	64.6	1,711	1,149	67.2	3,011	1,989	66.1	2.7	5.0	15.0	15.2	9.4	10.7	
1993	1,347	856	63.6	1,790	1,209	67.5	3,137	2,065	65.8	3.6	1.9	4.6	5.2	4.2	3.8	
1994	1,403	924	65.8	1,930	1,326	68.7	3,333	2,250	67.5	4.2	7.9	7.8	9.7	6.3	9.0	
1995	1,477	980	66.3	2,044	1,424	69.7	3,521	2,404	68.3	5.3	6.1	5.9	7.4	5.6	6.9	
1996	1,526	1,046	68.6	2,163	1,537	71.1	3,689	2,583	70.0	3.3	6.7	5.8	7.9	4.8	7.4	
*1997	1,585	1,102	69.5	2,305	1,659	72.0	3,890	2,762	71.0	3.9	5.4	6.5	7.9	5.4	6.9	
*1998	1,621	1,133	69.9	2,398	1,728	72.1	4,018	2,861	71.2	2.2	2.8	4.1	4.2	3.3	3.6	
*1999	1,678	1,170	69.7	2,522	1,812	71.9	4,200	2,982	71.0	3.6	3.3	5.2	4.8	4.5	4.2	
*2000	1,757	1,217	69.2	2,686	1,917	71.4	4,443	3,133	70.5	4.7	4.0	6.5	5.8	5.8	5.1	
*2001	1,831	1,249	68.2	2,840	1,997	70.3	4,672	3,246	69.5	4.2	2.6	5.8	4.2	5.1	3.6	
*2002	1,852	1,244	67.2	2,916	2,023	69.4	4,768	3,267	68.5	1.1	-0.4	2.7	1.3	2.1	0.6	

Note: \* = Forecast; ICAO traffic includes charters. Source: Airline Monitor.

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	109	110	112	171	144	141	140	139	178	133	135	121	135	
*1998	121	115	113	113	113	184	149	154	151	151	198	144	144	128	144	
*1999	124	117	116	116	116	196	157	166	161	162	212	152	153	137	153	

Note: \* = Forecast; Real = inflation adjusted. Source: OECD Economic Outlook, Jan 1997. Real GDP forecast from The Economist poll of forecasts

# 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
1990	100	100	100	100	100	100	100	100	100	100	100	100
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	110	107	85	161	136	84	107	96	102	124	126	71

**Note:** \* = Provisional. European indices = weighted average of BA, Lufthansa and KLM. US indices = American, 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 costs 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.	ECU	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	116	122	114	108	1997	0.611	1.734	5.836	1.451	0.884	121.1	5.85%
*1998	125	119	123	116	109	Jun 1998	0.611	1.772	5.943	1.472	0.900	137.9	5.75%**

**Note:** \* = Forecast, from The Economist. 1990-97 trends from OECD. \*\* = \$ LIBOR BBA London interbank fixing six month rate.

### WET LEASE RATES

	ACMI RATE \$/BLOCK HOUR	ACMI RATE \$/BLOCK HOUR	ACMI RATE \$/BLOCK HOUR	ACMI RATE \$/BLOCK HOUR			
727-200F	3,400-3,750	767-300ER	5,800-6,250	DC-10-30F	3,800-5,000	BAe 146-200	2,600-2,950
727-200A	2,800-3,300	767-300F	5,000-6,000	L-1011-1/50/100	5,000-5,750	BAe 146-300	3,000-3,300
737-200A	2,950-3,250	MD-11	7,800-8,500	L-1011-200F	3,400-3,600	F-100	1,900-2,500
737-300	3,000-3,260	MD-83	3,200-3,750	L-1011-500	5,000-5,650	Emb-120	1,500-1,750
737-400	3,200-3,500	MD-87	3,200	A300B4F	3,750-4,750	DHC 8-300	2,000-2,300
747-100F	4,500-4,750	DC8-55F	1,250-1,650	A300B4-200	4,900-5,350	ATR 42-300	2,000-2,350
747-200	7,200-7,700	DC8-62F	2,100-2,500	A300-600R	4,000-5,250	ATR 72	2,750-3,250
747-300	8,000-8,500	DC8-71F	2,800-3,200	A310-300	4,500-5,000	SAAB 340A	1,450-1,650
757-200ER	4,250-5,500	DC8-73F	3,400-3,600	A320-200	3,000-4,000	SAAB 340B	1,500-1,650
757-200F	4,250	DC9-30/50	3,200	A321-100	3,250-4,500	SAAB 2000	1,900-2,150
767-200ER	5,800-6,200	DC10-30	5,800-7,000	BAe 146-100	1,750-2,950	SHORTS 360	1,300-1,500

**Note:** ACMI = Wet lease rate (aircraft, crew, maintenance & insurance). **Source:** Alan John Hodder.

### JET AND TURBOPROP ORDERS

	Date	Buyer	Order	Price	Delivery	Other information/engines
Aero Int. (Reg.)	-	-	-	-	-	-
Airbus	May 15	Singapore Airlines	5 A340-500s	\$2.2bn (inc opts)	3Q02-03	+ 5 options. Trent 553
	May 13	Leisure Int. AW	2 A330-200s		00	PW4168A
	May 11	Aer Lingus	6 A320s, 1 A330-200			
	May 6	TAP Air Portugal	3 A321s		2H00+	From options
	Apr 29	Nouvelair	1 A320			+ 2 options
Boeing	May 20	Air Berlin	2 737-800s	\$200m (inc opts)	1Q00+	From options. + 2 new options
	May 20	Bavarian I.A.L.	2 737-700s		3Q01	
	May 19	Alaska Airlines	5 737-700s, 1 737-400	\$425m (inc opts)	99-00	+ 4 737-700 options
	May 19	Delta Air Lines	4 757-200s, 1 767-300ER		2Q-4Q99	
	May 15	American Airlines	25 737-800s		1Q00-1Q02	CFM56-7
	May 4	Bavarian I.A.L.	5 717-200s		2H99-00	BR715
	May 1	Delta Air Lines	1 737-800		3Q99	
Bombardier	May 18	Augsburg Airways	4 Dash 8-300s,			
			2 Dash 8-200s	\$78m		+ 7 assorted options
	May 8	Brit Air	6 CRJ-100s, 2 CRJ-700s			
Embraer	-	-	-	-	-	-
Fairchild Dornier	May 20	EuroCityLine	9 328JETs, 3 Do-328s		98-99	+ 6 328JET options
	May 20	Proteus Airlines	17 728JETs			

**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>American*</b>														
Jul-Sep 96	4,171	3,691	480	282	64,766.3	45,799.1	70.7	6.44	5.70	20,806	9,726.6	5,265.6	54.1	91,476
Oct-Dec 96	3,967	3,751	216	284	62,503.6	42,194.2	67.5	6.35	6.00	19,528	9,366.1	4,969.5	53.1	91,476
Jan-Mar 97	4,006	3,782	224	152	62,059.4	41,676.0	67.2	6.46	6.09	19,363	9,283.2	4,848.4	52.2	86,246
Apr-Jun 97	4,292	3,812	480	302	64,026.0	45,012.1	70.3	6.70	5.95	20,697	9,482.2	5,241.2	55.3	87,248
Jul-Sep 97	4,377	3,868	509	323	65,093.0	46,943.3	72.1	6.72	5.94	21,343	9,637.3	5,406.0	56.1	87,793
Oct-Dec 97	4,228	3,871	357	208	63,308.3	42,715.7	67.5	6.68	6.11					88,000
Jan-Mar 98	4,223	3,798	425	290	62,405.4	41,846.6	67.1	6.77	6.09					
<b>America West</b>														
Jul-Sep 96	423	476	-53	-46	8,939.7	6,419.5	71.8	4.73	5.32	4,671	1,119.4	682.3	61.0	10,617
Oct-Dec 96	440	415	25	12	9,272.8	6,405.0	69.1	4.75	4.48	4,620	1,162.4	688.1	59.2	10,866
Jan-Mar 97	475	442	33	14	9,318.8	6,408.6	68.8	5.10	4.74	4,590	1,168.8	686.7	58.8	10,592
Apr-Jun 97	478	427	51	23	9,410.5	6,668.9	70.9	5.08	4.54	4,674	1,180.1	712.8	60.4	11,442
Jul-Sep 97	462	425	37	18	9,623.6	6,779.9	70.5	4.80	4.42	4,692	1,205.8	724.3	60.1	11,690
Oct-Dec 97	473	432	41	20	9,573.7	6,219.9	65.0	4.94	4.51	4,375				11,506
Jan-Mar 98	483	434	49	25	9,408.0	5,851.4	62.2	5.13	4.61	4,149				10,820
<b>Continental</b>														
Jul-Sep 96	1,671	1,594	77	18	25,937.1	18,188.3	70.1	6.44	6.15	9,972	2,785.9	1,830.0	65.7	32,706
Oct-Dec 96	1,561	1,462	99	47	25,258.0	16,628.9	65.8	6.18	5.79	9,474	2,803.4	1,732.3	61.8	33,468
Jan-Mar 97	1,698	1,552	146	74	25,478.4	17,526.9	68.8	6.66	6.09	9,739	2,820.6	1,790.5	63.5	33,766
Apr-Jun 97	1,786	1,555	231	128	26,530.9	19,186.1	72.3	6.73	5.86	10,462	3,032.6	1,996.8	65.8	34,672
Jul-Sep 97	1,890	1,683	207	110	28,462.1	20,982.1	73.7	6.64	5.91	10,822	3,331.3	2,206.5	66.2	35,630
Oct-Dec 97	1,839	1,707	132	73	28,278.6	19,400.1	68.6	6.50	6.04	10,188				36,800
Jan-Mar 98	1,854	1,704	150	81	28,199.8	19,427.5	68.9	6.57	6.04	10,072				
<b>Delta</b>														
Jul-Sep 96	3,432	2,994	438	238	55,337.4	40,868.2	73.9	6.20	5.41	25,242	7,677.8	4,623.5	60.2	63,862
Oct-Dec 96	3,197	2,970	227	125	55,030.0	37,664.1	68.4	5.81	5.40	24,625	7,606.7	4,420.7	58.1	63,862
Jan-Mar 97	3,420	3,074	346	189	54,214.1	37,334.2	68.9	6.31	5.67	24,573	7,489.7	4,354.8	58.1	67,851
Apr-Jun 97	3,541	3,022	519	301	55,604.5	41,457.2	74.6	6.37	5.43	26,617	7,777.3	4,798.9	61.7	69,118
Jul-Sep 97	3,552	3,121	431	254	57,424.7	42,783.2	74.5	6.19	5.43	26,478	8,112.8	4,946.2	61.0	69,502
Oct-Dec 97	3,433	3,101	332	190	56,177.4	38,854.9	69.2	6.11	5.52			4,639.6		68,000
Jan-Mar 98	3,389	3,053	336	195	54,782.3	39,602.7	68.7							
<b>Northwest</b>														
Jul-Sep 96	2,735	2,266	469	254	40,461.0	31,077.4	76.8	6.76	5.60	14,368	6,445.2	4,045.4	62.8	46,994
Oct-Dec 96	2,340	2,265	75	26	37,216.7	26,054.6	70.0	6.29	6.09	12,723	5,965.7	3,566.9	59.8	47,631
Jan-Mar 97	2,376	2,241	135	65	37,102.1	26,702.1	72.0	6.40	6.04	12,661	5,800.7	3,471.3	59.8	47,628
Apr-Jun 97	2,558	2,267	291	136	38,985.3	29,195.9	74.9	6.56	5.82	13,780	6,175.7	3,817.3	61.8	48,025
Jul-Sep 97	2,801	2,298	504	290	41,491.3	32,231.1	77.7	6.75	5.54	14,743	6,587.3	4,189.3	63.6	47,843
Oct-Dec 97	2,491	2,264	227	105	38,465.5	27,791.0	72.2	6.48	5.89					48,984
Jan-Mar 98	2,429	2,272	156	71	38,260.1	27,038.2	70.7	6.35	5.94					
<b>Southwest</b>														
Jul-Sep 96	891	789	103	61	16,865.2	11,801.8	70.0	5.28	4.68	12,847	2,164.7	1,224.4	56.6	22,844
Oct-Dec 96	832	784	48	28	16,802.4	11,431.7	68.0	4.95	4.67	12,795	2,148.9	1,188.4	55.3	23,395
Jan-Mar 97	887	800	87	51	16,926.0	10,513.6	62.1	5.24	4.73	12,046	2,163.7	1,097.2	50.7	23,980
Apr-Jun 97	957	800	156	94	17,672.1	11,288.4	63.9	5.42	4.53	12,722	2,264.0	1,180.6	52.1	24,226
Jul-Sep 97	997	845	152	93	18,494.3	12,176.9	65.8	5.39	4.57	13,019	2,362.1	1,274.1	53.9	24,273
Oct-Dec 97	975	847	128	81	18,501.4	11,654.2	63.0	5.27	4.58	12,612				24,450
Jan-Mar 98	943	831	112	70	18,137.1	11,102.3	61.2	5.20	4.58	11,849				
<b>TWA</b>														
Jul-Sep 96	1,003	977	26	-14	18,426.5	12,919.5	70.1	5.44	5.30	6,381	2,550.6	1,476.5	57.9	26,332
Oct-Dec 96	803	1,036	-232	-263	16,020.4	10,050.2	62.7	5.01	6.47	5,517	2,201.5	1,195.1	54.3	26,578
Jan-Mar 97	762	862	-99	-72	13,772.4	9,129.6	66.3	5.53	6.26	5,345	1,898.2	1,054.3	55.5	25,662
Apr-Jun 97	844	839	6	-14	14,705.8	10,273.7	69.9	5.74	5.71	5,958	2,051.9	1,169.5	57.0	23,490
Jul-Sep 97	908	845	64	6	15,922.4	11,447.0	71.9	5.70	5.31	6,324	2,209.2	1,284.2	58.1	22,539
Oct-Dec 97	813	812	1	-31	14,348.8	9,570.2	66.7	5.67	5.66					22,500
Jan-Mar 98	765	834	-69	-56	13,626.4	9,276.3	68.1	5.61	6.12					
<b>United</b>														
Jul-Sep 96	4,488	3,878	610	340	68,560.4	51,680.9	75.4	6.55	5.66	22,241	9,868.5	6,134.8	62.2	84,579
Oct-Dec 96	3,976	3,923	53	19	65,894.4	45,617.2	69.2	6.03	5.95	19,948	9,505.3	5,615.2	59.1	86,008
Jan-Mar 97	4,121	3,927	194	105	64,832.6	45,296.6	69.9	6.36	6.06	19,683	9,386.1	5,530.0	58.9	86,443
Apr-Jun 97	4,382	3,970	412	242	67,458.0	48,894.2	72.5	6.50	5.89	21,271	9,917.6	6,032.1	60.8	88,939
Jul-Sep 97	4,640	4,077	563	579	71,375.4	53,721.0	75.3	6.50	5.71	22,641	10,566.8	6,561.1	62.1	90,324
Oct-Dec 97	4,235	4,144	91	23	68,364.7	47,419.6	69.4	6.19	6.06	20,623				91,700
Jan-Mar 98	4,055	3,932	123	61	66,393.3	44,613.0	67.2	6.11	5.92					
<b>US Airways</b>														
Jul-Sep 96	2,073	1,941	131	68	23,632.6	16,522.7	69.9	8.77	8.21	14,329	3,297.6	1,806.1	54.8	42,192
Oct-Dec 96	2,052	2,003	49	27	23,684.1	16,146.1	68.2	8.66	8.46	14,412	3,182.8	1,755.7	55.2	43,144
Jan-Mar 97	2,101	1,925	176	153	23,397.6	16,009.3	68.4	8.98	8.23	13,773	3,141.2	1,734.3	55.2	42,225
Apr-Jun 97	2,213	1,957	256	206	24,014.0	17,707.1	73.7	9.22	8.15	15,533	3,234.0	1,911.0	59.1	42,320
Jul-Sep 97	2,115	2,032	83	187	24,070.3	17,668.5	73.4	8.19	7.83	15,080	3,245.5	1,918.0	59.1	42,159
Oct-Dec 97	2,085	2,015	70	479	22,662.2	15,800.1	69.7	9.20	8.89	14,178				41,375
Jan-Mar 98	2,063	1,871	192	98	22,102.1	15,257.8	69.0	9.33	8.47					
<b>ANA</b>														
Jul-Sep 96	4,060	3,846	214	75	36,248.3	23,421.2	64.6	11.20	10.61	20,104				15,914
Oct-Dec 96	SIX MONTH FIGURES													
Jan-Mar 97	3,090	3,160	-69	-40	41,442.7	26,945.8	65.0	7.46	7.62	24,721				15,996
Apr-Jun 97	SIX MONTH FIGURES													
Jul-Sep 97	3,928	3,829	99	50	39,702.7	25,742.0	64.8	9.89	9.65	20,730				
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	SIX MONTH FIGURES													
Jul-Sep 96	SIX MONTH FIGURES													
Oct-Dec 96	2,121	1,802	319	280	28,320.0	21,428.0	75.7	7.49	6.35	5,633	5,266.0	3,838.0	72.9	
Jan-Mar 97	SIX MONTH FIGURES													
Apr-Jun 97	2,037	1,858	179	138	28,172.0	20,044.0	71.2	7.23	6.60	5,208	5,074.0	3,613.0	71.2	
Jul-Sep 97	SIX MONTH FIGURES													
Oct-Dec 97	1,921	1,784	137	117	28,932.0	18,917.0	64.4	6.64	6.17	4,810				
Jan-Mar 98	SIX MONTH FIGURES													
<b>JAL</b>														
Jul-Sep 96	5,406	5,269	137	24	54,783.8	38,491.2	70.3	9.87	9.62	15,046	8,254.3	5,406.0	65.5	

# Aviation Strategy

## Micro-trends

	Group revenue	Group costs	Group operating profit	Group net profit	Total ASK	Total RPK	Load factor	Group rev. per schd. ASK	Group costs per schd. 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>														
Jul-Sep 96	TWELVE MONTH FIGURES													
Oct-Dec 96	4,341	4,314	27	-249	54,071.5	38,136.6	70.5	8.03	7.98	23,741	10,953.3	8,253.2	75.3	17,139
Jan-Mar 97	TWELVE MONTH FIGURES													
Apr-Jun 97	4,574			-418										
Jul-Sep 97	TWELVE MONTH FIGURES													
Oct-Dec 97														
Jan-Mar 98														
<b>Malaysian</b>														
Jul-Sep 96	TWELVE MONTH FIGURES													
Oct-Dec 96	2,581	2,459	122	132	40,096.9	27,903.7	69.6	6.44	6.13	15,371	6,149.2	3,706.8	60.3	22,546
Jan-Mar 97	SIX MONTH FIGURES													
Apr-Jun 97				18										
Jul-Sep 97	SIX MONTH FIGURES													
Oct-Dec 97														
Jan-Mar 98														
<b>Singapore</b>														
Jul-Sep 96	2,506	2,173	332	398	36,152.9	27,202.4	75.2	6.93	6.01	5,930	6,599.8	4,632.9	70.2	27,259
Oct-Dec 96	SIX MONTH FIGURES													
Jan-Mar 97	2,492	2,205	288	316	37,354.4	27,490.1	73.6	6.67	5.90	6,092	6,901.3	4,879.1	70.7	27,223
Apr-Jun 97	SIX MONTH FIGURES													
Jul-Sep 97	2,549	2,171	379	402	38,125.4	28,216.7	74.0	6.69	5.69	6,135	7,231.0	5,091.5	70.4	27,777
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	2,336	2,080	256	258	39,093.6	26,224.3	67.1	5.98	5.32	5,822	7,303.0	4,951.5	67.8	
<b>Thai Airways</b>														
Jul-Sep 96	3,090	2,717	373	134	42,099.0	29,226.0	69.4	7.34	6.45	14,308	5,789.0	3,940.0	68.1	22,136
Oct-Dec 96	821	765	56	59	11,170.0	7,849.0	70.3	7.35	6.84		1,593.0			
Jan-Mar 97	824	777	47	25	11,369.0	8,128.0	71.5	7.25	6.83		1,621.0			
Apr-Jun 97	773	775	-2	11	11,352.0	7,583.0	66.8	6.81	6.83		1,620.0			
Jul-Sep 97	697	672	25	-1,050	11,462.0	7,668.0	66.9	6.08	5.86		1,639.0			
Oct-Dec 97	656	649	7	-661	12,144.0	7,715.0	63.5	5.40	5.34		1,712.0			
Jan-Mar 98														
<b>Air France</b>														
Jul-Sep 96	TWELVE MONTH FIGURES													
Oct-Dec 96	8,780	8,563	217	75	77,333.0	58,586.0	75.8	11.35	11.07	16,733*		5,036.0		36,173
Jan-Mar 97	SIX MONTH FIGURES													
Apr-Jun 97	5,224	4,850	374	297			76.1							
Jul-Sep 97	SIX MONTH FIGURES													
Oct-Dec 97	5,126	5,079	47	18										
Jan-Mar 98														
<b>Alitalia</b>														
Jul-Sep 96	TWELVE MONTH FIGURES													
Oct-Dec 96	5,283	5,238	45	789	50,960.4	34,131.5	68.9	10.37	10.28	23,138	8,167.7	5,674.0	69.5	16,507
Jan-Mar 97	TWELVE MONTH FIGURES													
Apr-Jun 97	5,083	4,878	205	161										
Jul-Sep 97	TWELVE MONTH FIGURES													
Oct-Dec 97														
Jan-Mar 98														
<b>BA</b>														
Jul-Sep 96	3,560	3,068	493	427	37,693.0	29,179.0	77.4	9.44	8.14	10,432	5,299.0	3,851.0	72.7	59,160
Oct-Dec 96	3,301	3,087	215	154	35,976.0	25,417.0	70.6	9.18	8.58	9,075	5,056.0	3,494.0	69.1	58,911
Jan-Mar 97	3,179	3,130	49	113	36,211.0	25,416.0	70.2	8.78	8.64	9,070	5,057.0	3,456.0	68.3	60,188
Apr-Jun 97	3,624	3,395	229	260	39,697.0	28,756.0	72.4	9.13	8.55	10,613	5,589.0	3,875.0	69.3	60,083
Jul-Sep 97	3,646	3,319	327	244	40,909.0	30,884.0	75.5	8.91	8.11	11,194	5,711.0	4,098.0	71.8	61,321
Oct-Dec 97	3,580	3,436	144	110	40,059.0	26,929.0	67.2	8.94	8.58	9,837	5,618.0	3,791.0	67.5	61,144
Jan-Mar 98	3,335	3,210	125	119	39,256.0	26,476.0	67.4	8.50	8.18	9,311	5,485.0	3,642.0	66.4	60,770
<b>Iberia</b>														
Jul-Sep 96	TWELVE MONTH FIGURES													
Oct-Dec 96	4,384	4,120	264	30	36,975.9	25,931.2	70.1	11.86	11.14	14,623	5,252.3	3,216.3	61.2	26,280
Jan-Mar 97	TWELVE MONTH FIGURES													
Apr-Jun 97	4,168	3,900	268	126*	37,797.6	27,679.2	73.2	11.03	10.32	15,432				
Jul-Sep 97	TWELVE MONTH FIGURES													
Oct-Dec 97														
Jan-Mar 98														
<b>KLM</b>														
Jul-Sep 96	1,680	1,569	111	154	17,296.0	13,820.0	79.9	9.71	9.09		3,075.0	2,373.0	77.2	31,836
Oct-Dec 96	1,483	1,494	-11	-4	16,806.0	12,346.0	73.5	8.82	8.89		3,010.0	2,203.0	73.2	31,866
Jan-Mar 97	1,361	1,444	-83	-153	16,279.0	12,455.0	76.5	8.36	8.87		2,838.0	2,090.0	73.6	31,912
Apr-Jun 97	1,692	1,566	126	99	17,310.0	13,663.0	78.9	9.77	9.05		2,999.0	2,338.0	78.0	34,804
Jul-Sep 97	1,842	1,592	250	438	18,798.0	15,747.0	83.8	9.80	8.47		3,233.0	2,589.0	80.1	34,928
Oct-Dec 97	1,630	1,570	60	23	18,096.0	13,555.0	74.9	9.01	8.68		3,293.0	2,404.0	77.6	35,092
Jan-Mar 98	1,538	1,568	-30	528	17,598.0	13,240.0	75.2	8.74	8.91		2,981.0	2,250.0	75.5	34,953
<b>Lufthansa</b>														
Jul-Sep 96	3,813	3,612	201	210*	30,907.0	23,356.0	75.6	12.34	11.69	11,636	5,420.0	3,909.0	72.1	57,999
Oct-Dec 96	4,369	4,195	174	165*	28,991.0	20,320.0	70.1	15.07	14.47	7,886	5,230.0	3,762.0	71.9	57,999
Jan-Mar 97	3,198	3,198	-1	12*	28,099.0	19,726.0	70.2	11.38	11.38	9,186	4,985.0	3,477.0	69.7	57,291
Apr-Jun 97	3,654	3,463	192	220*	32,109.0	23,465.0	73.1	11.38	10.79	11,618	5,505.0	3,893.0	70.7	57,901
Jul-Sep 97	3,721	3,418	303	321*	33,739.0	26,410.0	78.3	11.03	10.13	12,807	5,787.0	4,298.0	74.3	58,178
Oct-Dec 97	3,989	3,566	423	384*	30,209.0	21,691.0	71.8	13.20	11.80	10,839	5,467.0	3,919.0	71.8	59,630
Jan-Mar 98														
<b>SAS</b>														
Jul-Sep 96	1,297	1,180	117	41*	8,084.0	5,390.0	66.7	16.04	14.60	5,111				23,622
Oct-Dec 96	1,368	1,231	137	54*	7,678.0	4,688.0	61.1	17.82	16.03	4,948				25,530
Jan-Mar 97	1,133	1,108	24	-36*	7,443.0	4,335.0	58.2	15.22	14.89	4,515				23,440
Apr-Jun 97	1,379	1,151	228	178*	7,962.0	5,392.0	67.7	17.31	14.46	5,617				23,904
Jul-Sep 97	1,244	1,093	151	83*	8,084.0	5,598.0	69.2	15.39	13.52	5,227				24,168
Oct-Dec 97	1,334	1,204	130	63*	7,771.0	4,939.0	63.6	17.17	15.49	5,212				28,716
Jan-Mar 98	1,184	1,077	106	76*	7,761.0	4,628.0	59.6	15.25	13.88	4,863				24,722
<b>Swissair**</b>														
Jul-Sep 96	SIX MONTH FIGURES													
Oct-Dec 96	1,285	1,348	-63	-355	16,372.6	11,074.0	64.4	7.85	8.23	4,857				10,202
Jan-Mar 97	SIX MONTH FIGURES													
Apr-Jun 97	1,787	1,724	63	76	17,464.4	11,880.7	68.0	10.23	9.87	7,643	3,340.6	2,291.9	68.6	10,163
Jul-Sep 97	SIX MONTH FIGURES													
Oct-Dec 97	2,084	1,946	138	147	18,934.8	13,770.8	72.7	11.01	10.28	6,352	3,536.4	2,538.1	71.8	10,132
Jan-Mar 98														

Note: Figures may not add up due to rounding. \*Pre-tax. \*\*SAirLines.

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