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The unpredictable dynamics of alliance competition

"In the future airline competition will be competition between alliances" - this vision of the evolution of the airline industry from Jurgen Weber CEO of Lufthansa is now widely accepted. But its implication of rational global competition between integrated networks is far from today's reality.

Recent proxy battles between the alliances - see pages 2 and 3 - reveal the unpredictable dynamics of alliances and the tensions between the members.

The concept of cross-equity links had been abandoned in forming the mew global alliances (except where it was considered necessary to support a privatisation as with Thai next year). Now in the case of Air Canada, the senior members of Star find themselves having to invest funds to stave off a hostile bid from American and others.

Star is expanding well beyond its original plan of 10 members, with Austrian, ANA, SIA, Mexicana, BMA and a Chinese airline all in the process of joining. Oneworld is adding Iberia, Aer Lingus and Lan Chile in quick succession. As such it is very difficult to maintain any semblance of equality between the participants.

This table summarises the recent profitability of the alliance members and gives a clear indication of their relative power. Within Star United, Lufthansa and SIA account for 82% of profits. Oneworld is dominated by American, 65% of profits by itself, and this dominance will increase this year as BA's and Iberia's profits are expected to fall.

Most of the alliance members make marginal profits in terms of the overall groupings, and a fair number are in some form of financial distress. Will the big players increasingly find themselves supporting the weaker members for strategic reasons?

Another danger is that as the alliances grow, the decision-making processes become unwieldy, and the more powerful players decide to make their own arrangements. American, for example, will soon be announcing an extension of its codesharing agreement with Swissair/Sabena, outside oneworld and in potential conflict with partners in its main alliance.

1998 NET PROFIT OF ALLIANCE MEMBERS

($ million)	ONEWORLD			STAR	
Canadian	-89.9	-4.5%	ANA	-54.1	-2.1%
Cathay Pacific	-70	-3.5%	Varig	-21.9	-0.9%
Aerolineas	-65.8	-3.3%	Air Canada	-10.5	-0.4%
Lan Chile	31	1.5%	Austrian	15.1	0.6%
Finnair	64.9	3.2%	British Midland	16	0.6%
Aer Lingus	76.4	3.8%	Ansett	20	0.8%
Qantas	190	9.4%	ANZ	75.8	3.0%
Iberia	235.2	11.7%	Thai	80	3.1%
British AW	332	16.5%	SAS	335.7	13.1%
American	1314	65.1%	SIA	525.7	20.5%
TOTAL	**2017.8**	**100.0%**	Lufthansa	764.7	29.8%
			United	822	32.0%
			TOTAL	**2568.5**	**100.0%**

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Potential Star attack on UK premium traffic

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Lufthansa has announced that it is in negotiations with British Midland about taking half of SAS's 40% stake in the carrier. No great surprise here - despite BMA being linked with every possible alliance, the terms of the shareholder agreement between SAS and Sir Michael Bishop and associates (see *Aviation Strategy*, October 1999) made it very difficult for an airline other than a Star member to buy into BMA. What was surprising was the forcefulness of BA's announcement of the probable deal, railing at unfair competitive practices, the inequities of former state aid injections, etc.

The reason behind BA's concern is indicated by this estimated breakdown of slots at Heathrow and Frankfurt. If BMA's 14% of slots are added to Star total Fortress Heathrow begins to look pregnable - indeed, the Star alliance now has a substantial second position, a bit like the split between United and American at Chicago.

BA appears to be particularly annoyed by Lufthansa's near monopoly on German domestic routes to/from Frankfurt and its dominance on intra-European routes to/from its main hub, in contrast to the much more competitive markets to/from Heathrow (or rather London).

This structure is reflected in comparative fares. According to American Express Corporate Travel Index both German business and economy fares on short/medium-haul routes are well above the European average and perhaps 20% above comparable UK fares. Also, the degree of competition squeezes the difference between business and economy fares on short/medium routes from the UK.

However, a different picture emerges on the long-haul business class routes to/from the UK. These fares command a premium, and this strongly influences the average UK fare. Again according to Amex, published business class fares to/from the UK, weighted by actual traffic flows, are noticeably higher than those to/from Germany (although this difference is probably inflated as corporate discounts tend to more generous in the UK). Interestingly, the gap between UK business and economy fares widens substantially with distance travelled, whereas this does not happen with German fares.

COMPARATIVE FARES (Euros, 1999)

	Germany	UK	Germany higher (lower) than UK
First	6059	7896	-23%
Business	1081	1758	-39%
Full Economy	1002	841	19%
Discount Economy	958	779	23%

Source: Amex European Corporate Travel Index, 2Q99
Note: based on samples of city pairs from each country so the fares may not be directly comparable but give an indication of key trends.

APPROXIMATE SLOT SHARES (%) AT MAIN HUBS

		LHR	FRA
Domestic	oneworld	58	0
	Star	11	95
Intra-Europe	oneworld	38	6
	Star	18	53
Atlantic	oneworld	66	5
	Star	19	59
Other	oneworld	36	1
	Star	11	57
Total	**oneworld**	**42**	**3**
	Star	**25**	**66**

On this analysis, BA's concentration on business travel, downsizing of economy capacity and intra-European cut-backs would appear to have a logical foundation. BA's concern may not be so much Star's appearance in the short/medium haul markets ex-London - these routes haven't been particularly profitable for BMA, and Lufthansa ownership is not going to change that situation. The danger is that the BMA slots could eventually be used for transatlantic flights, operated probably by BMA with LH/UA codeshares.

So BA now has even more incentive than before to use its influence to block changes to the Bermuda 2 bilateral. But then an immunised codeshare with American is not just postponed, it is definitively cancelled.

The unpredictable factor in all this is Virgin Atlantic. Richard Branson has been making noises about joining a global alliance, and recent reports indicate that Virgin's profitability on transatlantic routes is eroding. Following his failure in the US courts to prove accusations of anti-competitive behaviour against BA (this time on the question of over-ride commissions), would he now be tempted to ally with Lufthansa and United to give Star a new long-haul operation from Heathrow - a "my enemy's enemy is my friend" strategy?

Canada: restructuring plan lost in financial battle

Last year Air Canada and Canadian between them lost US$100m ($10m for Air Canada, $90m for Canadian). But in the past United and Lufthansa, on the one hand, and American, on the other, have made claims of mutual alliance revenue benefits from their Canadian partnerships of $200m and $100m respectively, and are now waging a financial battle for control of the Canadian industry.

As at the end of October the situation was as follows. Onex, an investment company backed by American, was offering to buy 100% of Air Canada for US$1.6bn, up from its initial $1.2bn bid, then merge it with Canadian and call it New Air Canada. American also said that it would eventually be willing to sell out its 15% stake in the merged carrier.

Air Canada's defence funds were being provided by Lufthansa and United plus the Canadian Imperial Bank of Commerce, which between them were providing about $600m, $540 to buy back Air Canada shares and $60m to buy the equity of Canadian and assume the carrier's debt of over $1bn. Under this deal, Lufthansa and United would have about 10% of the equity of Air Canada.

Air Canada and Canadian would remain separate entities with distinct brands while American and Sabre would be repatriated. Intriguingly, Delta was proposed as a replacement for oneworld. Surplus aircraft liberated by the rationalisation of the two carriers' networks would be allocated to a new low- cost subsidiary in the west (presumably to try fend off competition from WestJet).

In addition, a poison pill, which may or may not be legal, has been inserted.

If Onex succeeds in winning control of Air Canada, it will have to pay Lufthansa and United a penalty fee of at least $165m for to compensate them for breaking the just-signed financial agreements between Air Canada and its Star partners. Another $50m would be claimed by Lufthansa and Star to compensate for the non-appearance of new feed from Canadian.

The competing bidders do agree on is the need to rationalise the two carriers, a strategy that became feasible when the Canadian government agreed in August to suspend some antitrust laws so that restructuring of the Canadian industry could be discussed. But, in the event the financial battle seems to have subsumed any form of strategic planning.

In Onex's bid document, for example, there are only passing references to rationalisation: Onex reckons that unit revenues would increase because of better load factors so pushing up joint revenues by about 10%, while moving to larger aircraft could reduce operating costs by 16%.

Onex states hopefully that the proposed merger will improve Air Canada's and Canadian's joint operating cashflow margin of about 15% to that of the better US Majors, between 20 and 23%. However, Onex appears to have completely ignored the cost of merging in making its projections for New Air Canada.

As for Air Canada, it evidently doesn't want to risk absorbing Canadian's balance sheet, and so the proposed structure for the industry is still disjointed. The split alliance strategy between Star and Delta is confusing (and where does Air France fit in?)

Finally, because of the frenetic pace of events leading to a vote by Air Canada's shareholders on November 8th, the fundamental question of which alliance would best serve a rationalised Air Canada/Canadian airline has scarcely been addressed. Onex did compile a table of alliance market shares on Canadian routes (irritatingly omitting numbers for the two Canadian airlines), but its argument boils down to the assertion that oneworld would be better than Star because it has a larger presence in most of the markets.

ALLIANCE SHARES TO/FROM CANADA (%)

	oneworld	Star
US	11.5	9.0
Europe	15.8	9.1
Asia	13.4	9.1
Caribbean	13.4	0.4
Central America	17.1	2.7
Middle East	17.1	10.2
South America	30.3	8.8
Australasia	27.8	30.6

Source: Onex
Note: Based on CRS bookings in 1999; excludes the two Canadian airlines; markets ranked in terms of size

What does EADS mean for Airbus and the A3XX?

Just as the merger between British Aerospace and the Marconi defence electronics group sent a series of after-shocks through the global aerospace industry, so one of the biggest of those after-shocks - the merger of Aerospatiale Matra and DASA (the aerospace part of DaimlerChrysler) - is itself causing tremors.

The French-German merger, which gives birth to the European Aeronautics, Space and Defence Systems company (EADS), came about because BAe last year abandoned a deal with DASA in favour of a domestic British deal with Marconi, creating an integrated group covering both defence electronics and the aerial platforms they go on.

In the longer term, the major effect will be to spur both BAe and EADS to find transatlantic alliance partners; BAe historically was close to McDonnell Douglas, but chose to ally with Lockheed Martin in its bid for the Pentagon fighter mega-contract, for fear of upsetting its European Airbus partners. But now that Lockheed is in trouble and the French and Germans are getting tougher without the British, some BAe executives wish they had gone with the winning Boeing team rather than Lockheed.

GIE to SCE

The immediate impact, however, of the Franco-German deal will be on the future of Airbus. For years discussions about converting this GIE (Groupement d'Interet Economique) from a loose consortium into a proper company (the SCE or Single Corporate Entity) have got bogged down in squabbles over valuations of the assets devoted to Airbus by the four partners-Aerospatiale-Matra, DASA, British Aerospace and CASA. But assimilation of CASA by DASA and the Aerospatiale-DASA should simplify things. As one BAe executive says, "We are now only one negotiation away from creating a single corporate entity for Airbus". Between them the French and the Germans (including CASA) now own about 80% of Airbus, but BAe still enjoys a veto over important decisions, such as whether to admit an eager Lockheed Martin to some of its projects.

BAe is keen to proceed with the conversion for several reasons. The business reasons start with the benefits the change will bring to Airbus, by increasing stock-turns and generally improving efficiency, bringing benefits of at least $1bn a year. Conversion will also make it easier to raise money from governments, from banks and from other risk-sharing partners in order to finance the $11bn development of the A3XX .

Importantly, an Airbus SCE will help to crystallise the shareholder value which BAe estimates is tied up in the consortium arrangement. Mike Turner, BAe's executive director in overall charge of its Airbus interests reckons that today's valuation of £2bn ($3.2bn) on its Airbus share could be worth twice that amount in four years, after conversion to an SCE. BAe has rejected the option of selling out of Airbus in favour of holding in for the long term to realise full shareholder value, when Airbus is eventually floated after conversion.

There are still hurdles to be overcome. For instance, BAe believes that the work it does on Airbus is worth more than the 20% share it has of the development, marketing and product support consortium. Even so, things should be simpler. "In the past," says a BAe insider, "we were talking about selling a part of our company to three other companies in return for buying a small part of each of theirs. Now we are just swapping a part of our company for something hopefully more than 20% of the Airbus company."

SCE pre-condition to A3XX

Simpler the negotiations may be, but they could not be more urgent. Although no one

formally says so, the SCE is a pre-condition to the production launch of the A3XX. Neither the British nor the German government wants to pour money into what may be an ill-defined black hole. Moreover, there is always the suspicion of job-protection engendered by the French government involvement in the project.

Beyond such concerns, Airbus is trying to raise capital for the project on a risk-sharing basis from suppliers and airlines; both would be happier if it were housed in a transparent company rather than a consortium where the core partners can hide all sorts of nasty numbers.

Soon the supervisory board will authorise CEO Noel Forgeard and his marketing team to go out and make offers to airlines in the hope of landing two or three launch customers, preferably including those prepared to share part of the risk.

Buteven this marketing launch does not signal the definitive go-ahead for the A3XX project. In fact, the marketing launch is really part of the iterative process of putting together the business case for the aircraft. The stronger the market prospect, the better the business case.

Defensive manoeuvres

Airbus makes up about half the business of EADS. But the defence side of both also involves a complex set of working relationships. BAe calculates that, counting in Airbus, about 70% of EADS's business is tied up in joint ventures in which it is involved. For example, in missiles, the activities of BAe, Matra, Aerospatiale and those of the Italian group Alenia are all in one group now, thanks to BAe's merger with Marconi, the formation of EADS and a new agreement between BAe and Alenia. Only the partly privatised French group Thomson remains outside this Euromissile grouping, which is number two in the world to America's Raytheon.

BAe is also trying to tie up a new deal with Alenia on aircraft, so that the British-Italian couple could be the dominant partners in the Eurofighter consortium. The attraction for Alenia is that such a deal could open the door to its entry into Airbus, primarily as a risk-bearing partner in the A3XX but later as a full shareholder. Indeed it is a reflection of Airbus's recent sales success that outsiders are queuing up to join.

United: what's the optimal growth rate?

According to United's top management, zero growth let alone downsizing is simply not an option. The largest US Major remains convinced that capacity growth, albeit at fairly modest levels, is essential for profitability even in a relatively mature market.

During the period 1994-98 United's domestic capacity grew by an average of 3.2% pa compared the rest of the industry at 2.5%. Its unit revenues (revenue per ASM or RASM) increased at 2.7% pa compared to 2.2% for the rest of the industry. The higher than average growth rate and the higher than average profitability improvement are connected for various reasons.

First, growth deters competitive incursion. Remaining static attracts the attention of competitors, particularly low-cost new carriers. If they succeed, new entrants are

SUMMARY OF GROWTH DYNAMICS

	Low	Moderate	High
PRO	• Short term RASM improvement • Incursion deterred	• Maintain position - S-Curve - Connectivity - Business Traveller • Existing hubs develop rapidly	• Market share gained • New hub opportunities
CON	• Competitive incursion • Untapped potential • Reduced connecting • Decreased city presence	• Status quo market share • Unexploited competitive advantages	• Reduced short-term RASM

Source: United

likely to steal market share from the incumbents and then capture the large majority of incremental growth in what will be a stimulated market (for instance, the United Shuttle, when it was introduced in to the Californian market in the mid-90s, was quickly able to take the market away from the incumbent, Delta). If they fail, they will still probably have undermined the yield structure.

Second, increased city presence enables United to achieve a disproportionately high share of revenue compared to its capacity share. The graph (right) shows the relationship between revenue and capacity shares at United's hubs; the curve describes the classic S-curve shape. As an airline becomes larger in a city it is likely to capture more business traffic because of increased frequencies in key markets and a wider range of destinations. In turn, it is able to negotiate more corporate volume agreements, offer a more attractive FFP - in short, become the "natural choice".

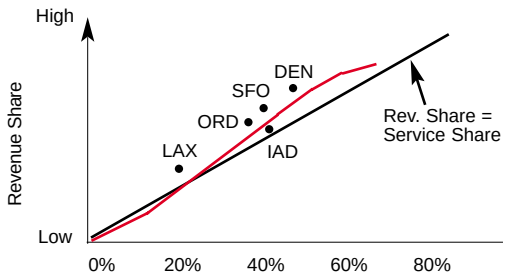
In reverse, United's experience of keeping capacity constant in markets where other airlines have been growing at 3% p.a. has been a fall in RASM over a five year period of about 1.8%.

Third, connecting revenue growth is correlated, hardly surprisingly, with capacity growth at a city. United noted that at Chicago its domestic growth during 1993-98 was non-existent and domestic connecting revenue grew at about 3% p.a. while at Los Angeles and Denver capacity growth of 6-7% p.a. brought connecting revenue growth of 9-11% p.a.

Fourth, United claims that business travellers prefer bigger airlines - or more precisely the bigger airlines tend to get the corporate travel contracts. For example, United, Delta and American with about 51% of industry capacity hold about 85% of the primary corporate travel accounts (defined as the “Top Corporate Travel 100”) while the remaining 15% are shared among the other Majors.

Fifth, for United the rate of capacity growth has partly been driven by the requirement to develop its newer hubs. At Denver and Los Angeles it has been increasing

REVENUE AND CAPACITY SHARES



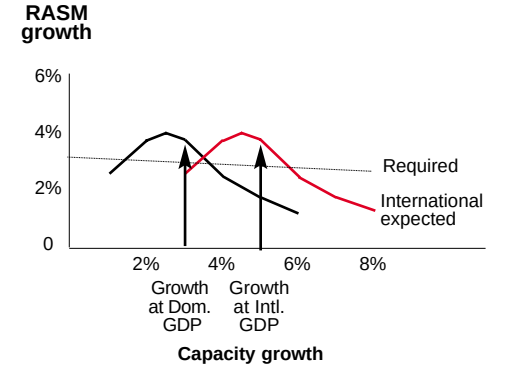
capacity at 6-7% p.a. in what it describes as a high growth, high potential markets.

This chart (below) summarises United's strategy. It shows the "required" combinations of RASM growth and capacity growth for United to achieve its target of a 11.2% increase in earnings (that produced by the top quartile of general US industry). Superimposed on this line are the expected curves for domestic and international RASM/capacity growth under given assumptions about GDP growth.

In summary then, United's annual capacity growth targets are 1.5-2.5% domestically, 4-5% internationally and 2.4-3.4% for the whole system.

United's strategy would appear to be a rational middle way between the frantic market share battles of the late 80s in the US and BA's experimentation with downsizing today. However, all of the US big three more share one fundamental worry about growth strategies: if they maintain their recent growth rates, and Southwest continues its (profitable) expansion, then the largest US Major in 2010 will be… Southwest.

PLANNED GROWTH RATES



Schiphol: what's the optimal level of pollution?

The Netherlands is the most environmentally sensitive country in Europe. For example, windsurfers are currently being accused of causing "visual pollution" along the nation's coastline. Evidently then, Amsterdam's Schiphol Airport has a very high profile with environmentalists and needs an effective green strategy.

In 1995 the Dutch Government produced an integrated plan which included over a hundred different measures related to the future development of the airport. Whilst approval was given for the construction of a fifth runway, which was aimed at diverting traffic to a less noise sensitive approach to the airport rather than to providing more runway capacity, the airport was also set a series of environmental limits. These were primarily:

- A noise contour that was not to exceed 15,000 houses until 2003, and to be reduced to 10,000 houses beyond 2003;
- Total passengers handled not to exceed 44m in any one year;
- Total cargo tonnes handled not to exceed 3.3m in any one year.

The growth in traffic at Schiphol (passenger numbers increased by 9.7% in 1996, 13.2% in 1997, and 9.4% in 1998) has meant that the airport exceeded its noise contour limitations in both 1997 and 1998, resulting in the airport being taken to court. The government allowed an exemption to be granted to Schiphol for the breaches of the noise limitations but in turn put in place a limitation in the future growth of slot movements at the airport.

The maximum number of annual slot movements has been set at 380,000 movements for 1998 and annual increases to be limited to 20,000 movements thereafter. In 1999, the airport will keep below its limit of 400,000 movements and meet its noise limitations. The question for Schiphol is, however, how to meet future demand whilst meeting the both the limitations on movements and the need to meet the more stringent noise target that will come into force at the end of 2003.

Modelling policies

A study* to monitor environmental capacity issues at the airport has come up with some interesting initial findings on the measures that could provide the optimal balance between economic costs and environmental benefits. Under the high growth scenario, Schiphol on an unconstrained basis would be expected to handle some 64m passengers p.a. by 2010, up from its 1998 level of 34m passengers.

The study then modelled several policy variants that would keep Schiphol within its environmental constraints, but at the same time allowing growth at the airport at a minimum cost to the airport's users (the airlines).

The outcome of modelling two of these variants - involving financial measures and imposing noise and capacity limitations - are shown below. (Other options considered included changes to flight scheduling and technical operations.)

The modelled options were assessed by their impact on:

- Passenger traffic (split by terminating and transfer passengers, business and leisure, and by short and long-haul);
- Noise (split by cargo and passenger, type of aircraft, and by usage of the airport throughout the day); and
- Cost to the airlines.

Option 1:
A Fl12.50 (US$26) levy per departing seat or Fl125 per tonne of cargo

The model showed that such a levy would increase the cost of operating from the airport to the airlines by about 3%. By

far the largest impact would be on the highly sensitive cargo operators, which would result in the number of cargo movements falling by some 70%. Transfer and leisure passenger traffic, which is also price sensitive, would also fall, producing a reduction in passenger traffic of about 6%. The fact that some of the cargo operations are using noisy aircraft and that a large proportion of the movements occur between 2300-0600 hours (which carries a noise weighting 10 times higher than daytime movements) meant that this option produced a 20% noise reduction for a 3% increase in costs.

Option 2:
Direct noise levy on aircraft types

Schiphol formed its own classification of aircraft types that included sub-dividing Stage 3 compliant aircraft into noisy, medium noisy and quiet types. The quiet types would be able to use the airport at no additional expense, but levies would be introduced for more noisy types. This option once again produced a forecast that showed cargo movements most badly impacted, falling by just over 50%, but proved to be more efficient than Option 1 producing an overall reduction in noise at the airport of 30% for just a 3.5% increase in costs.

Option 3:
Noise levy by aircraft type and by time of day

Using the same noise classifications in Option 2, the levy applied to the airlines was also adjusted for the time of day. So usage between 0800-1800 hours carried the lowest levy, the levy increased 3.75 times for usage between 1800-2300 hours, by 5.6 times between 0600-0800, and by 10 times between 2300-0600 hours. This proved to be more efficient than Option 2, producing a 33% noise reduction for just a 3.5% increase in costs. Unfortunately this measure exaggerated further the impact on the cargo operators producing a fall in cargo traffic of 70%.

Option 4:
Passenger quota limitation of 44m

A simple levy aimed at reducing passenger usage at the airport by imposing cost increases across the board produced a very inefficient result. A 30% noise reduction was only achieved by producing a 20% cost increase.

Option 5:
Slot trading and a 600,000 annual movement quota

As well as not being permitted under EU law, slot trading produced a relatively inefficient result. In order to achieve a 30% noise reduction costs would have to increase by some 7%.

Airline implications

Restrictive quotas on passengers and/or movements are an inefficient method of solving the noise problems at Schiphol. More efficient are options that incentivise airlines to use both quieter aircraft and to fly during social hours. Schiphol is currently modelling pollution quotas, which are expected to be even more efficient than Option 3, the best of those shown above.

Whatever policy is chosen it must be cost-related, transparent and not biased to any one airline. A creative mix of policy measures such as the options outlined above may be able to keep the environmentalists happy as well as giving the airport growth possibilities beyond 600,000 movements by 2010.

Perhaps the most difficult task will be keeping KLM happy. The airline is heavily biased by European standards to both transfer traffic and to carrying cargo, both of which are adversely impacted by the main policy options considered. Ultimately, KLM may have to re-equip its entire fleet with ultra-quiet types, while other European carriers would only need to have a couple of ultra-quiet aircraft in its fleet to be still able to serve Schiphol.

* *Ongoing study carried out with the UK consultancy MVA by the Dutch CAA.*

US new entrants are bouncing back

The US low-cost new entrant airline sector has bounced back strongly this year, after two years of heavy losses and turmoil following the ValuJet crash in May 1996. Many of the surviving carriers are now reporting healthy profits, while several new entrants have begun operations or are gearing up for launch with strong financial backing. Is the recovery sustainable?

Frontier and AirTran, which are the largest survivors of the 1993-1995 crop of new entrants, are both now performing extremely well.

Frontier reported its first-ever annual net profit, $25.1m or 11.4% of revenues, for the year ended March 31, after losing $17.7m in the previous year. After paying a major loan back early, the carrier is virtually debt-free and had $70.5m cash reserves at the end of June, compared to just $3.6m in March 1998. Its rapid growth and new stability enabled it to move its listing from Nasdaq's SmallCap to the National Market in the summer.

AirTran, in turn, has now had three consecutive profitable quarters - an indication that it has finally shaken off the negative ValuJet legacy and reinvented itself. It recently settled out of court its lawsuit against SabreTech regarding the ValuJet crash. Its cash reserves were a comfortable $55.2m at the end of September. After losing a total of $179m in 1996-1998, the carrier looks likely to post a net profit before special items of around $25m for 1999.

The brightened prospects are also reflected in the carriers' fleet plans. AirTran recently took delivery of the first of 50 717- 200s, for which it is the launch customer, and is now considering accelerating the retirement of its DC-9-30 fleet. In mid-October Frontier, in a notable departure from its previous strategy of leasing or buying used 737s, signed an LoI to purchase 11 new A318s and A319s.

Even Vanguard, which was earlier viewed as an unlikely survivor, seems to have found a more viable niche after constantly switching markets.

After losing $25.8m in 1996 and $28.2m in 1997, the Kansas City-based carrier reported only a marginal $1.5m net loss for 1998. It has now posted small operating profits for six consecutive quarters. In the early summer the company successfully completed a reverse stock split and regained its Nasdaq SmallCap listing, though liquidity remains a concern.

Vanguard must consider itself very lucky as the post-ValuJet era has seen the demise of many far more promising operators. The biggest disappointment was the failure of Western Pacific, which filed for Chapter 11 in October 1997 and ceased operations in early 1998. The carrier had developed a unique low-fare niche at Colorado Springs but had expanded extremely rapidly, which meant that it had little cash left when it plunged into heavy losses in late 1996 due to the ValuJet effect. A year or so of continuous cash crisis culminated in a key investor backing out at a critical moment.

Of course, the failures included many struggling carriers that had little hope of long term survival in the first place, because they had chosen wrong markets or inappropriate business strategies. TriStar ceased operations in January 1997 and Air South in August of that year. The latter had little chance of ever making a profit, because it had no local traffic,and its majority-owner Hambrecht & Quist refused to inject more funds.

Pan Am went into Chapter 11 and ceased flying in February 1998 after losing $80m since beginning operations in September 1996. This was in part due to the ValuJet factor but also because of mistakes made in the choice of fleet (A300s) and markets. A late 1997 merger with equally cash-strapped and heavily loss-making Carnival did not help, and the combine ran out of cash while trying to restructure and consolidate their operations. However, Pan Am continued to operate charters, emerged from Chapter 11 in June last year with the help of a new owner and has just resumed scheduled operations.

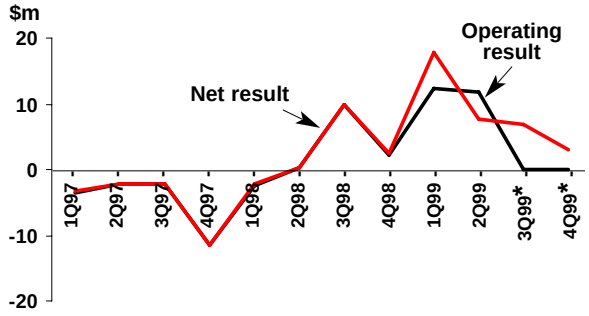
But Kiwi, which has less of a name to sell, is now in the process of having its few remaining assets liquidated after a turbulent seven-year history that included three FAA- imposed groundings, two Chapter 11 filings and frequent top management changes. The Newark-based carrier, which was always highly rated for its service quality, last resumed scheduled operations in January 1998 and began venturing back to its old East coast markets, but debt remained high, cash reserves poor and losses continued.

Its third grounding by the FAA in March was the last straw. Although it was constantly on the verge of securing new strategic investors, none were in sight when needed in August and Kiwi filed for Chapter 7.

Greensboro, North Carolina-based Eastwind, which operated two leased 737-700s to Trenton (New Jersey) and Orlando, suspended indefinitely its scheduled flights in September. This followed layoffs, route cutbacks and management changes implemented in the summer. The carrier has been looking for a merger partner or a buyer prepared to pay at least $10m.

But perhaps the most poignant admission of defeat came from Reno, which late last year agreed to be acquired by AMR because its leadership was concerned about long-term survival prospects for independent low-fare carriers. Reno was one of the most successful of the early 1990s startups and remained profitable through much of the ValuJet-induced crisis, even though it had to continuously restructure. It has now been more or less fully integrated into American - a process that turned out to be rather painful because of problems with American's pilots union.

FRONTIER QUARTERLY FINANCIAL RESULTS



** First Call consensus estimates. Note: Calendar year quarters (Frontier's financial year ends March 31)*

Post-ValuJet new entrants

Weaker demand conditions, a tougher regulatory environment, difficulty in raising capital and a tighter supply of second-hand aircraft in late 1996 meant that new applications and startup airline activity in the US virtually dried up for more than two years. There was only one new low-cost entrant (Pro Air) in 1997 and none in 1998.

Although Pro Air managed to raise startup capital without too much difficulty, it had to wait 15-16 months for certification. However, all the indications are that it has performed extremely well in competition with Northwest in some business-oriented markets out of Detroit. The company recently completed a $30m private offering, is in the process of launching a regional feeder operation and has initiated the IPO process.

The next new low-cost entrant, AccessAir, did not begin operations until February this year. The Des Moines-based airline links Los Angeles and New York LaGuardia with direct 737 services via points in Iowa and the Midwest. It has ambitious plans to expand to key cities on both coasts.

This year's second new entrant, National Airlines, began low-fare 757 services from its Las Vegas hub in May. Its nonstop network now includes Chicago, Los Angeles, New York JFK, San Francisco and Dallas Fort Worth, with Philadelphia due to follow in November.

Northwest's recent labour and service quality problems led to a rather interesting strategy shift for Sun Country Airlines. The old-established privately held charter operator introduced low-fare scheduled service from Minneapolis/St. Paul in head-on competition with Northwest in June. The initial experience must have been encouraging as the scheduled operations are now being expanded to business and leisure destinations all around the nation. Sun Country is also establishing a more permanent presence at key airports by signing gate leases and operational agreements.

In early October Pan Am finally resumed scheduled passenger operations with reconfigured 727-200s, linking Portsmouth (New Hampshire) with Orlando. This followed its Chapter 11 reorganisation and acquisition for $28.5m by New England railroad operator Guildford Transport Industries in June 1998.

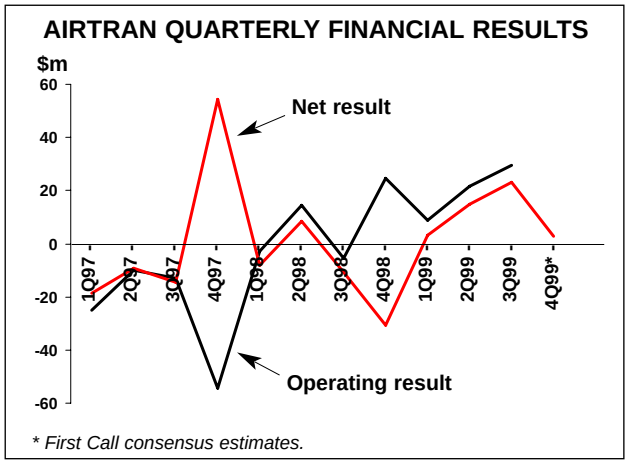
Late last year the company's headquarters were relocated from Fort Lauderdale to Portsmouth, where it benefits from a state-of-the-art maintenance hangar, a reservations centre and its own passenger terminal.

The new owners spent some time evaluating whether or not to re-enter scheduled service. According to the airline's new president Dave Fink, the new strategy is to "slowly add destinations based on market demand and the ability to locate underutilised airport facilities". Service to Chicago is due to begin in mid-November. The company must demonstrate fitness to operate more than eight aircraft and submit a progress report to the DoT after the first year of scheduled service.

The most exciting of the new carriers gearing up for startup is JetBlue (Aviation Strategy, August 1999), which plans to bring low fares to New York JFK in January, with initial services to Buffalo and Fort Lauderdale. JetBlue hopes to serve 11 cities with 10 aircraft by the end of 2000 and 30 cities in the eastern half of the country within three years. Earlier this year it signed an agreement with Airbus to acquire up to 82 A319/A320s, including 25 firm orders, 50 options or purchase rights and eight leases.

The venture, which has obtained fitness clearance from the DoT but still needs FAA-certification, has received overwhelming local and national political support as it will be New York City's first-ever homegrown low-fare airline, with fares up to 80% lower than what is currently available. The DoT recently granted it an exemption to the "high density rule" at JFK for all the 75 slots it had sought JetBlue's intention is to offer Southwest- style one-class, high-frequency service in markets that are underserved or have high average per-mile fares. It hopes to generate new traffic and eventually achieve unit costs comparable to those of Southwest.

The venture is the brainchild of its CEO David Neeleman, who co-founded Morris Air (which was bought by Southwest in 1993) and founded successful Canadian startup WestJet, which went public in July. But the most remarkable thing about JetBlue is that it has secured about $130m in initial funding from a group that includes George Soros and Chase Manhattan Bank, making it one of the best-funded startup carriers in history. Unlike many



** First Call consensus estimates.*

of its counterparts, it will have the resources to weather competitive responses from established carriers.

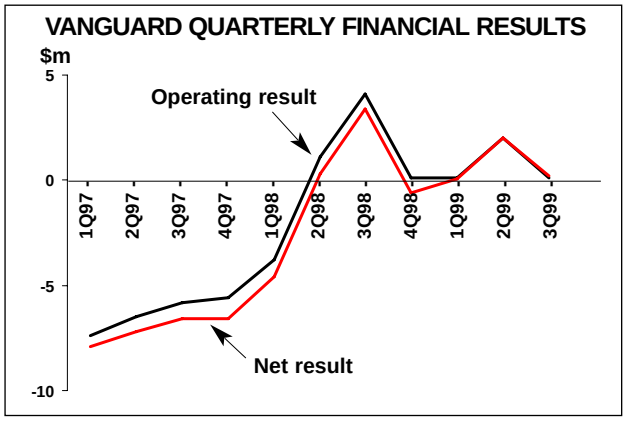
But few other hopefuls can match JetBlue's credentials in the eyes of investors. Among them, Northern Airlines, which has been in the making since at least early 1996, withdrew its certificate application earlier this year as it could not raise the funds. Probably for the same reason, little has been heard about AirPortland's plans this year.

But there are cases where sheer determination helps. After persistently fighting American and airport and city authorities in the courts for many years, campaigning in Washington DC and even building its own terminal, Legend Airlines now hopes to begin low-cost nonstop scheduled service out of Dallas Love Field to major business destinations early next year. It recently signed an agreement with Sabre to provide reservations, inventory control systems and consulting services.

Demand recovery

The 1996 events, which were followed by an extended debate about maintenance practices and safety, dealt a severe blow to the former image of a "penny-pinching" small low-cost operator. The US consumer still demanded low fares, but established carriers were preferred. And the choice was there because the major carriers took full advantage of the situation by pricing more aggressively at the back end of the aircraft or launching low-fare subsidiaries like Delta Express (October 1996).

However, a combination of the public having a short-term memory about safety matters and



extensive change implemented by low-cost operators to transform themselves into more conventional-type carriers appears to brought back the passengers. As long as product quality and pricing are right, demand for low-cost service has been strong over the past year. This has enabled the airlines to finally benefit from the economic boom enjoyed by the majors.

While carriers like AirTran have taken this as an opportunity to improve load factors, Frontier and Vanguard have been able to grow rapidly without adverse impact on the bottom line. Frontier's capacity surged by 50% in the June quarter (the latest period reported), but that was fully matched by traffic growth. The company is confidently predicting 20% annual growth over the next two years and has signed an agreement to almost double its gates at Denver early next year. Vanguard's 21% ASM growth in January-September was more than matched by RPM growth, which enabled it to boost its load factor to 69.2%.

Smarter strategies

The low-cost new entrant airline sector has been able to bounce back because it has been able to adapt to changed circumstances. The smarter strategies include adequate capitalisation, more disciplined route selection and expansion, reinvesting profits in new aircraft, emphasis on service quality, better cost controls and yield management and embracing new technology and the Internet.

Several of the new carriers have opted to use cheaper and less congested secondary or third-tier airports - a strategy used very effectively by Southwest to ensure quick turnarounds, keep costs down and avoid undue attention from the major carriers. For example, the new Pan Am has chosen to operate to Gary/Chicago Airport, which probably few even knew existed and which the authorities are renovating in the hope of diverting traffic from congested O'Hare.

Another common theme is the utilisation of brand new aircraft. While AirTran and Frontier are only now moving to new fleets, new entrants like Pro Air, AccessAir and JetBlue regarded it imperative right from the start. New aircraft will help the public's perception of an unknown company's quality and safety, and they are more reliable and cheaper to operate - another good reason to ensure adequate startup funds.

The new-generation low-fare entrants value new technology and regard the Internet as a useful distribution tool. Most have Internet booking capabilities. A recent research report by Salomon Smith Barney considered that the material benefits anticipated from the Internet will help Southwest and other low-cost carriers at the expense of the cyclical majors.

No-frills business classes

The trend of low-cost carriers focusing on the higher-yield passenger segment has intensified over the past three years. No- frills business classes offering bigger seats and more legroom, assigned seating and FFPs have almost become the norm for the latest new entrants.

Exceptions, of course, are the likes of JetBlue that hope to emulate Southwest, though JetBlue's brand new aircraft, leather seats and 24-channel live satellite television broadcasts at every seat may also appeal to business travellers.

Pan Am Mark III has enhanced its Clipper Class premium-service with more spacious business-class type interiors, achieved by reducing the number of seats on the 727s from 173 to 149, and more individualised service via extra flight attendants.

Much of the new expansion has focused on business-oriented routes. For example, this year Frontier has boosted its service from Denver to New York, San Francisco and Seattle, while AirTran recently introduced Atlanta- Newark flights. Pro Air has expanded

in key business markets like LaGuardia and Chicago from Detroit.

The carriers typically offer advance purchase fares that are competitive with those of the major carriers, while significantly reducing unrestricted, walk-up and first class fares (which they can afford to do since their overall unit costs are lower). Not surprisingly, the fares appeal to the increasingly cost-conscious business travel segment.

One particularly popular strategy has been to go all out to secure corporate travel contracts, which provide a guaranteed revenue stream. Pro Air led the way with its multi- million dollar 10-year contracts with Chrysler and General Motors in the summer of 1998. The deals allow unlimited travel for a fixed monthly fee, saving those two companies $3m and $6m per year respectively. Pro Air said at that time that it hoped to build that base up to totally cover its costs, and it has since then secured many more similar contracts with smaller companies. The strategy has also been extensively used by Frontier, which signed its 2,200th corporate contract in the summer.

All of that has had an extremely beneficial impact on unit revenues and yields. AirTran's revenue per ASM surged by 16% in January-September, which suggests that it has captured some higher-yield traffic from Delta. The introduction of the 717 will offer new opportunities to enhance service quality.

Frontier's unit revenues surged by 21-28% in each of the past four quarters, though some of the improvement was due to more rational pricing in the Denver markets following WestPac's disappearance.

Vanguard's unit revenues rose by a remarkable 59% in 1998, from 6.28 cents to 10 cents per ASM, and another 12% in the first half of this year - a reflection of its presence in more high-yield markets. But a 38% capacity surge led to declines in yield and unit revenues in the latest quarter.

Will costs remain under control?

One of the biggest concerns are rising cost levels, which have been an inevitable consequence of the focus on business traffic and service quality generally. Vanguard's and AirTran's unit costs, at 9.80 and 8.40 cents respectively in the first nine months of this year, look much higher than what many feel low- fare carriers should achieve.

Frontier cut its unit costs substantially last year, thanks to improved aircraft utilisation, lower insurance costs, insourcing of ground handling and increased efficiencies through the growth of Denver hub operations. But its unit costs again rose in the June quarter, and another hike was likely in the latest period due to higher maintenance and flight operations costs and a late delivery of a replacement aircraft. However, AirTran managed to marginally reduce its unit costs despite service interruptions due to engine problems.

All the carriers faced a more challenging operating environment in the September quarter because of higher fuel prices and the impact of Hurricane Floyd. Both Frontier and AirTran warned in September that their earnings would be below expectations.

There are some concerns about how the airlines will cope with growth, their fleet replacement strategies and labour cost pressures. Carriers like Frontier and Pro Air face newly-unionised worker groups. Frontier began paying bonuses to its employees earlier this year - a practice that it will probably have to maintain.

Competition rules

While the DoT has yet to produce its long-awaited rules to prevent predatory behaviour, the mere threat of new rules and serious investigations, plus the DoJ's antitrust lawsuit against American, appear to have made major carriers generally less aggressive in their pricing over the past 18 months. This has helped facilitate the recovery of the low-fare new entrant airline sector.

However, the continued specific allegations about predatory behaviour (most recently by Sun Country about Northwest) and complaints about being denied gates and other facilities at major airports suggest that the situation could quickly worsen, particularly now that the major carriers suffer from overcapacity in the domestic market. The DoT rules are still needed to give small low-fare carriers a chance to consolidate recovery.

By Heini Nuutinen

Aer Lingus: Flying Celtic Tiger

At the start of the 1990s the Irish government (which owns 95% of the shares with the employees holding the other 5%) had to rescue Aer Lingus the airline with a state aid injection of I£175m ($270m). Today Aer Lingus has shed its non-core subsidiaries, is on the point of joining the oneworld strategic alliance, and is profitable in a competitive environment. It serves as a blueprint on how to survive as a medium cost airline with a small domestic base.

There have been four elements to the airline's recovery:

- The capital injection from the government;
- A focus on achieving productivity gains and cost savings;
- The development of a route network and fleet strategy that allows the airline to offer a full service product, and
- The designation of Dublin as a transatlantic gateway.

As part of the state aid process Aer Lingus was obliged to develop a new commercial strategy. It would have been impractical as well as politically unacceptable for Aer Lingus to try and re-position itself as a low-cost airline. Therefore, the strategy adopted called for Aer Lingus to create a differentiated and high quality product that would allow it to justify premium pricing.

AER LINGUS FLEET PLANS

	Current fleet	Orders	Remarks	Av age (years)
Aer Lingus				
737-400	6			9.1
737-500	7			8.1
A320		6	Delivery 2000-02	
A321	5	1	Delivery 1999	0.9
A330	6	1	Delivery 2000	4.3
MD-11	1		On short-term lease	7.2
Aer Lingus Commuter				
BAe 146	9			10.3
Fokker F50	4			9.6
Futura				
737-400	12			
737-800	6			
TOTAL	**50**	**14**		**8.9**

The strategy calls for a young fleet (the Aer Lingus mainline fleet averages just under six years), an above industry average level of punctuality, and training of staff to consistently deliver a high quality product. The airline has successfully emphasised its customer-focus through its "Programme for a Better Airline" , which has set minimum performance standards for punctuality, queuing, baggage delivery, airport facilities and the in-flight product.

Aer Lingus Commuter, which operates mainly on UK provincial and domestic routes, provides Aer Lingus with an airline whose costs reflect the low yields generated on these routes, enabling it to compete effectively with low cost airlines such as Ryanair. Aer Lingus Commuter currently operates a fleet of four Fokker 50s and nine BAe 146 aircraft. The change-over of the main fleet to Airbus aircraft may mean that the Commuter division eventually inherits the 737-500s.

Sale of non-core subsidiaries

The European Commission attached various conditions to the three tranches of state aid it approved for Aer Lingus, the most high profile of these being the requirement to sell the Copthorne Hotel group. Since then the company has continued to dispose of non-core activities including its shareholding in Airmotive Ireland to Lufthansa Technik, and Shannon Repair Services to UPS.

The EC also demanded action over the losses stemming from TEAM Aer Lingus, the maintenance arm of the company. TEAM was finally sold at the end of 1998 to FLS Aerospace Holdings. The re-named TEAM FLS has a 10-year agreement with Aer Lingus to conduct maintenance for the airline.

Route network

Aer Lingus has four main markets: Dublin-London, Ireland to UK provincial

cities, continental Europe routes and transatlantic services. Some of its domestic routes receive government subsidies under the Essential Air Services programme.

- **Dublin-London**

Dublin-London, the densest city-pair in Europe, has two distinct sub-markets.

Dublin-Heathrow is business-orientated because of flight frequency, convenience to central London and connecting opportunities. Aer Lingus and British Midland are the only competitors on this route, British Airways having pulled out shortly after the Irish-UK services were liberalised in the 1980s.

In 1998, London traffic growth was 9%, and Aer Lingus reported particularly strong growth in the business class cabin. It has recently replaced 737-400s with larger A321s on this route.

Dublin-Stansted (and in the past Dublin-London Luton) has been a route dominated by the low-cost airlines, particularly by Ryanair. In 1997 Aer Lingus recommenced service to Stansted in direct competition with Ryanair. The justification for this decision included Stansted's growing importance, the willingness of business passengers to use the airport for its links into the City of London, and the inability of Aer Lingus to obtain more slots at Heathrow. By using Aer Lingus Commuter, it has been able to develop the route and compete effectively with Ryanair.

Such is the strength of the Irish economy and the Dublin-London market, Aer Lingus will be operating to a third London airport from October 31st this year, flying BAe 146s to London City.

- **Ireland-other UK**

Aer Lingus Commuter also operates to seven other destinations in the UK (as well as the Irish domestic services). Aer Lingus is keen to promote Dublin as a hub, and these services contribute to the long-haul feed for the transatlantic routes.

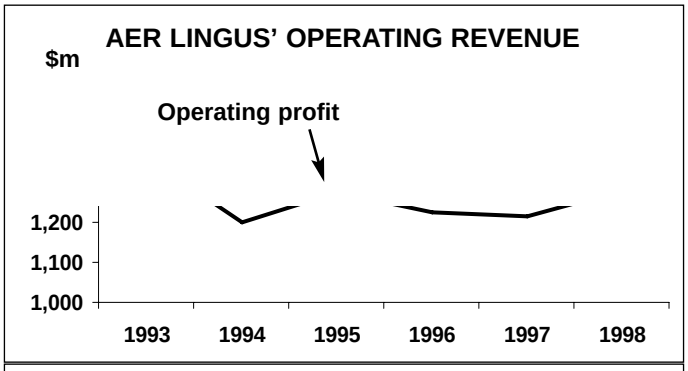
- **Ireland-continental Europe**

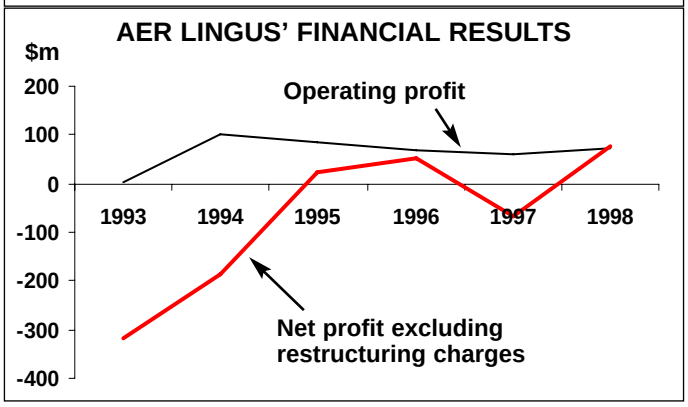
Despite Ryanair's expansion, or perhaps because of it, Aer Lingus itself continues to show strong growth on continental European routes where traffic rose by 14% last year. Aer Lingus focus is on attracting business traffic, and working with European partners such as KLM, Sabena and Finnair to develop its route network.

- **Transatlantic services**

To understand Aer Lingus' transatlantic strategy requires an appreciation of the Shannon stopover policy. The very strong political lobby on the west coast of Ireland continues to argue that without direct transatlantic services the mainstay of the region's economy, tourism, would suffer catastrophically. Until recently, any airline serving Ireland from North America had to land in Shannon before continuing to Dublin and return in the same manner. Understandably, many Dublin-bound or -based passengers preferred to use Heathrow.

The Shannon stopover policy was one contributory factor to the airline's poor financial performance at the end of the 1980s. But the near bankruptcy of the airline at the start of the 1990s forced a modification of the stopover policy: Aer Lingus and other transatlantic airlines are now allowed to fly directly to/from Dublin but they are still obliged to provide an equivalent number of





TRAFFIC SUMMARY - 1998

	Pax (m)	Growth
Transatlantic	0.8	+9%
Ireland-London	2.0	+9%
Ireland-UK Provincial	1.1	+14%
Ireland-continental Europe	1.1	+14%
TOTAL	**5.0**	**+11%**

Shannon stopover flights.

While this restrictive policy has carried a cost for Aer Lingus, it has also discouraged in the past US carriers from operating scheduled passenger services in direct competition to Aer Lingus. This situation has now changed as a result of Continental's entry into the Dublin/Shannon-New York Newark market using 757s, and Delta's entry this summer into the same market but from JFK.

The partial relaxation of the stopover requirement and the introduction of the A330 aircraft to replace 747s has turned around the transatlantic services. Aer Lingus currently serves New York (JFK and Newark), Boston and Chicago. Service to Los Angeles was started in May and so far is running way beyond expectations.

- **Futura**

Based in Palma, Futura is an independently managed charter airline operating a fleet of 12 737-400s with six -800s on order. The airline operates principally from Palma in the summer and Tenerife in the winter, and last year added a third base at Malaga. Futura provides capacity to tour operators to mostly northern European markets but it has no tour operator parent and so relies solely on price and availability to sell seats. According to Aer Lingus, It has been profitable since its inception in 1990.

The alliance process

Aer Lingus is one of the last of the medium-size European flag-carriers (the other is Olympic) to join a global alliance. Up to now the airline has relied on a series of tactical alliance partners in Europe and the US chosen on a route by route basis. However, because of the increasingly exclusive nature of global alliances this has become an unsustainable strategy for Aer Lingus.

The alliance decision-making process started in March 1997 when the Irish government instructed the Board of Aer Lingus to "explore the possibilities of entering into a major strategic alliance, with or without the transfer of equity, and to submit proposals". The Board appointed NatWest Markets to assist in the process and, delayed by the TEAM sale process, the report to the government entitled "Strength through alliance" was submitted in April 1999.

The government appointed early this year its own advisors, Salomon Smith Barney, to review the alliance process and to ratify the recommendations of the Aer Lingus board. Six proposals were considered, three of which included an equity element from American Airlines/British Airways, TWA and Swissair, and three which did not include an offer to purchase equity from Air France, Lufthansa and Delta.

Alliance choice: oneworld

Aer Lingus is currently negotiating its strategic alliance agreements with both BA and American and these airlines will sponsor Aer Lingus's entry into oneworld. Their proposal offered the most attractive cost and revenues benefits to Aer Lingus. British Airways route network to destinations such as Australia was more closely aligned to the origin and destinations of traffic carried by Aer Lingus than the networks of Swissair, Lufthansa or Air France. American provided the best fit of the US carriers to the Aer Lingus gateways, and crucially was the only airline to offer a substantial presence at Chicago.

The main boost to revenue from joining the oneworld alliance is likely to be on Aer Lingus' transatlantic routes. One danger that has been recognised is the potential diversion of traffic over Heathrow from Aer Lingus's European services. According to the Salomon report, "mechanisms have been identified to minimise" such a diversion.

The AA/BA proposal was also attractive because of for the size and reach of the respective frequent flier programmes, the focus on generating cost savings and the recognition of the importance of technology transfer.

Financial performance

Five years ago the prospect that both Aer Lingus and Ryanair would both be making strong operating profits would have seemed highly unlikely. Yet, although Ryanair has pursued an annual 25% growth policy (primarily out of Dublin), Aer Lingus has found a strategy that has allowed it to flourish in the harshest of competitive environments.

The latest set of financial results for the calendar year ending 31st December 1998 show a profit before interest, tax and exceptional items of I£52.4m ($79m), up 13.7% on 1997. The improvement arose from a 10% increase in passengers, and a 12.4% rise in turnover. At the year-end, Aer Lingus's net cash position had risen 40% to I£70m.

The Salomon report has also highlighted the need for Aer Lingus to raise new equity, although it fails to recommend whether this should be achieved through a sale of shares to AA/BA, an IPO or indeed a combination of the two. The Irish government has stated that it will not provide any further equity. Salomon argues that Aer Lingus requires a minimum injection of capital of I£150m ($227m) in the next 12-18 months, and that further capital will be needed in the next 2-3 years if Aer Lingus is to successfully weather an industry downturn.

Salomon base their findings on comparing Aer Lingus's financials against a peer group of other European scheduled airlines. The report argues that Aer Lingus currently has a higher reliance on aircraft operating leases (50%) versus a peer group average of only 30%, a low level of interest cover and a higher reliance on debt related finance instruments than its peers.

AER LINGUS FINANCIAL RATIOS

	1999 estimates		2000 estimates	
	Peer grp	Aer Lingus	Peer grp	Aer Lingus
Net debt/equity	127.4%	181.9%	117.0%	163.9%
Equity/total capital	47.4%	35.5%	49.8%	37.9%
Equity/EBITDA	2.6x	1.6x	2.5x	1.7x
EBITDA/ (interest+rentals)	4.0x	2.3x	4.4x	2.3x

Source: Salomon Bros

The future

The Shannon stopover remains an anachronism in today's liberalised aviation environment. Ireland remains alongside a decreasingly small number of European countries, including the UK, not having an "open skies" agreement with the US. If Aer Lingus is to be able to gain the full benefits of membership of a strategic alliance with a US carrier then a "open skies" agreement will have to be signed to gain access to anti-trust immunity. In the meantime, 1999 will be the first year that the carrier has direct competition from two US carriers on the Atlantic.

Sensibly, Bernie Cahill, Aer Lingus's non-executive chairman does not see the securing of membership of a strategic alliance as "a panacea for unresolved issues or to camouflage inefficiencies". Thus airline continues to place a strong focus on cost control. A target of I£50m of savings over the next five years which will represent a reduction in unit costs of some 5% p.a.

A decision on privatisation is expected to be taken by the Irish government early next year. For this to occur Aer Lingus will need to put in another strong financial performance in the current year. Indications are that this will be achieved, with the Irish economy continuing to be a strong driver of growth.

The "Celtic tiger", has in the past few years posted growth levels that are among the highest in Europe. In 1998 GDP growth hit 8%, and the current year forecast is for growth of 7%. Membership of "Euroland" has resulted in falling interest rates, and with taxes also falling, disposable incomes have risen sharply. The weakness of the Euro against Sterling and the US Dollar has boosted Ireland's appeal as a tourist destination and encouraged VFR traffic. Much improved cross-border relations with the UK following the Good Friday peace agreement has also boosted traffic volumes.

Ryanair continues on be a very formidable competitor, but it has stimulated the overall Irish travel market, which has brought benefits to Aer Lingus. And Ryanair's European growth plans are no longer centered on Dublin but on Stansted.

Making the Internet work for airfreight

Current airfreight marketing practices look remarkably as they did at the beginning of the 1990s. Techniques pioneered by the integrators - notably door-to-door seamless services, advanced tracking and tracing techniques, and differentiated time-definite products - remain the standards to which heavy freight forwarders and carriers aspire. Space on aircraft is assigned mostly on the basis of allocations without take-or-pay penalties. Most marketing activities remain based in longstanding relationships between forwarders and carriers. The overwhelming majority of heavy airfreight shipments are managed by forwarders, with little disintermediation having been pursued by shippers or consignees on the one side, and carriers on the other. By and large, the substantial strides made in establishing and integrating the global passenger alliances have not been replicated in freight transport.

Most technical innovation has focussed on establishing and enhancing electronic data interchange (EDI) links among forwarders and carriers, the best-publicised example being Cargo 2000. Although some progress has been made with EDI, it is fair to say that a truly seamless, global network remains an unrealised objective

The marketing paradox

Set against this background of limited innovation, the airfreight industry faces a paradox as it continues to struggle with its traditional frustrations. On the positive side, annual airfreight growth consistently falls in the 6-8% range. Airfreight remains a large and exciting business, generating some $45bn in annual revenues for the carriers.

Yet yields on heavy airfreight are dropping 10-20% year over year as shippers and consignees continue to put pressure on rates. If one believes Boeing's estimates of effective worldwide airfreight capacity in the 200-250bn RTK range, the industry barely enjoys an overall load factor of 50%, fully 20 points below recent passenger figures.

Operationally, transit times reflect a failure of the industry to streamline airport, ground and load-planning practices in a way that widens the positive service gap between air and ocean freight. Conventional wisdom places the blame for this situation on by-product business economics, uncertainty over commitments to move as booked, directionally unbalanced markets, and spoilers dumping capacity at low prices on economically fragile routes.

Fingering these culprits alone, however, ignores a major opportunity area for airfreight: that of using emerging technology to create new and exciting markets for airfreight. Airfreight accounts for only 4%t of containerised world freight shipments by weight, while ocean freight makes up the remaining 96%. Airfreight, however, is used to transport almost half of containerised shipments by value.

This indicates what anyone in the industry knows to be true anecdotally - that, last minute emergencies aside, airfreight is used only to transport the highest value-to-weight ratio commodities. In theory, shifting the next 2-4% of ocean shipment weights on the value-to-weight curve to air would fill available airfreight capacity in most lanes, even those with dismal rate levels. Such a shift, accomplished gradually, would barely catch the notice of the ocean carriers, and would be unlikely to inspire a disciplined, effective competitive response. Why, then, hasn't the shift occurred?

The answer, quite simply, is that airfreight marketing practices remain tradition-bound and monumentally inefficient. Even beyond large consolidations, where one expects reliance on personal relationships and high touch sales and service techniques, most marketing activity is very labour-intensive. Forwarders seeking space or, less frequently, carriers seeking last-minute shipments, rely heavily on telephone and fax machines to identify supply and create demand.

Inefficiencies inherent to disjointed marketing techniques create operational frustration and confusion, distort pricing, and leave carriers with low load factors, forwarders with low margins, and customers with low quality service and limited choice. Coping as industry sales forces do with these relentless, daily pressures, it is little wonder that limited attention can be given to strategic opportunities.

Imperfect information and inefficient transactions

The Internet has the highest potential to improve commerce in markets exhibiting at least one of two conditions.

The first condition is that the market is characterised by highly imperfect information. Certainly this is the case in the airfreight market. All concerned market participants do not have a common understanding of the amount and types of space available on particular routes, on particular days, after allocations are considered. Unused inventory expires each time an aircraft takes off with empty slots. Buyers might have existed at a given origin for a departing slot, yet the lack of any freight equivalent to passenger global distribution systems (GDSs) means that in all likelihood, buyer and seller will not have known about each other.

Often, participants in the market appear to believe that imperfect information is advantageous. For example, forwarders do not perceive it to be in their interest for shippers and consignees to understand market rates in full detail. Likewise, carriers often prefer that forwarders and shippers not understand actual space availability in detail. The common fear of both carriers and forwarders is that more perfect market knowledge would inspire a precipitous fall in rates.

The second condition under which the Internet is a high potential resource is when transactions are very inefficient. The airfreight market meets this criterion as well. As described above, the actual process of selling requires extensive human intervention even for routine sales, yet the transactional inefficiency in the airfreight market extends far beyond this narrow observation. In the current environment, it is virtually impossible to price marginal inventory (in the form of slots that are only available sometimes, that may not move as booked, etc.) on a marginal basis. In most airfreight environments, there is no effective spot market. Airfreight transactions, therefore, are inefficient both mechanically and economically.

The Internet airfreight opportunity

An Internet-based venue for the purchase and sale of excess airfreight is an idea whose time has come. The particular mechanics of such a venue exist on a spectrum defined by simple message boards or postings on one end and sophisticated auctions on the other.

The common objective, however, should be two-fold: to make more perfect information available more broadly, and to increase the transactional efficiency of the market. Simply put, rates for excess space should be allowed to find their natural levels, and so long as sales and marketing costs for the excess space are dramatically reduced through the use of the Internet, these rates may be attractive to carriers and forwarders as well as shippers.

Currently, there are no fully functional Internet sites that accomplish these dual objectives in the airfreight market. Of the several sites that intend to focus on airfreight, or extend a model from another mode to airfreight, none is operational. The essential questions to be asked about all of these sites are:

- Will they improve the availability of accurate market information? and
- Will they make transactions in the airfreight market more efficient?

There is some doubt that the answer will be affirmative. Driven by fear of further rate erosion, disruption of customer relationships, and/or a shift of power to shippers and consignees, many industry participants would oppose greater availability of market information. To be fair, some drop in rates might follow routine publication of more perfect information, and individual forwarders or carriers would likely find themselves on the losing, rather than winning, side of the ledger, at least temporarily.

Despite these risks, the availability of better information is essential to increasing transactional efficiency. The core problems identified at the beginning of this discussion - low overall load factors, directional imbalances, unreliable service, etc. - are unlikely to improve markedly without a significant blast of glasnost, and the long term health of the industry may depend upon it. Airfreight holds tremendous potential for carriers, intermediaries and shippers - an impressive and steady growth rate, a steady source of further primary market growth from high value ocean shipments, and a favourable international trade environment. The Internet offers new possibilities for realising this potential, but only if participants in the market are prepared to trade short-term rate stability for permanent economic and operational improvement.

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EUROPEAN SCHEDULED TRAFFIC

	Intra-Europe			North Atlantic			Europe-Far East			Total long-haul			Total international		
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %
1991	114.8	65.2	56.8	120.9	84.3	69.7	80.0	53.1	66.4	267.6	182.0	68.0	397.8	257.9	64.7
1992	129.6	73.5	56.7	134.5	95.0	70.6	89.4	61.6	68.9	296.8	207.1	69.8	445.8	293.4	65.8
1993	137.8	79.8	57.9	145.1	102.0	70.3	96.3	68.1	70.7	319.1	223.7	70.1	479.7	318.0	66.3
1994	144.7	87.7	60.6	150.3	108.8	72.4	102.8	76.1	74.0	334.0	243.6	72.9	503.7	346.7	68.8
1995	154.8	94.9	61.3	154.1	117.6	76.3	111.1	81.1	73.0	362.6	269.5	74.3	532.8	373.7	70.1
1996	165.1	100.8	61.1	163.9	126.4	77.1	121.1	88.8	73.3	391.9	292.8	74.7	583.5	410.9	70.4
1997	174.8	110.9	63.4	176.5	138.2	78.3	130.4	96.9	74.3	419.0	320.5	76.5	621.9	450.2	72.4
1998	188.3	120.3	63.9	194.2	149.7	77.1	135.4	100.6	74.3	453.6	344.2	75.9	673.2	484.8	72.0
Aug 99	18.1	12.4	68.6	20.6	17.0	82.6	11.5	9.4	82.3	44.3	36.0	81.4	65.5	50.8	77.6
Ann. chng	3.3%	1.2%	-1.4	11.2%	9.6%	-1.1	-2.5%	1.8%	3.5	6.9%	6.8%	-0.1	6.1%	5.6%	-0.3
Jan-Aug 99	133.0	83.9	63.1	144.7	111.5	77.1	89.4	68.4	76.4	326.8	246.8	75.5	482.8	346.2	71.7
Ann. chng	6.2%	4.1%	-1.3	13.3%	11.9%	-1.0	-0.9%	2.6%	2.6	9.2%	8.2%	-0.7	8.5%	7.5%	-0.7

Source: AEA.

US MAJORS' SCHEDULED TRAFFIC

	Domestic			North Atlantic			Pacific			Latin America			Total international		
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %
1991	835.1	512.7	61.4	108.0	75.2	69.6	117.0	78.5	67.1	44.3	27.4	61.8	269.2	181.0	67.2
1992	857.8	536.9	62.6	134.4	92.4	68.7	123.1	85.0	69.0	48.0	27.4	57.0	305.4	204.7	67.0
1993	867.7	538.5	62.1	140.3	97.0	69.2	112.5	79.7	70.8	55.8	32.5	58.2	308.7	209.2	67.8
1994	886.9	575.6	64.9	136.1	99.5	73.0	107.3	78.2	72.9	56.8	35.2	62.0	300.3	212.9	70.9
1995	900.4	591.4	65.7	130.4	98.5	75.6	114.3	83.7	73.2	62.1	39.1	63.0	306.7	221.3	72.1
1996	925.7	634.4	68.5	132.6	101.9	76.8	118.0	89.2	75.6	66.1	42.3	64.0	316.7	233.3	73.7
1997	953.3	663.7	69.6	138.1	108.9	78.9	122.0	91.2	74.7	71.3	46.4	65.1	331.2	246.5	74.4
1998	961.0	679.1	70.7	150.3	118.5	78.8	112.1	81.6	72.8	84.0	52.3	62.3	346.4	252.4	72.9
Aug 99	90.0	66.6	73.9										32.7	26.4	80.8
Ann. chng	7.4%	4.5%	-2.1										3.9%	7.3%	2.6
Jan-Aug 99	668.2	477.6	71.5										238.9	179.4	75.1
Ann. chng	4.3%	3.8%	-0.3										2.4%	4.2%	1.4

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

ICAO WORLD TRAFFIC AND ESG FORECAST

	Domestic			International			Total			Domestic growth rate		International growth rate		Total growth rate	
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK %	RPK %	ASK %	RPK %	ASK %	RPK %
1992	1,305	837	64.2	1,711	1,151	67.3	3,016	1,987	65.9	3.0	4.6	15.1	15.3	9.5	10.5
1993	1,349	855	63.3	1,785	1,205	67.5	3,135	2,060	65.7	3.4	2.0	4.4	4.8	3.9	3.6
1994	1,410	922	65.3	1,909	1,320	69.1	3,318	2,240	67.5	4.6	7.9	6.9	9.4	5.9	8.8
1995	1,468	970	66.1	2,070	1,444	69.8	3,537	2,414	68.3	4.1	5.4	8.5	9.4	6.6	7.8
1996	1,540	1,043	67.7	2,211	1,559	70.5	3,751	2,602	79.4	4.9	7.4	6.8	8.0	6.0	7.8
1997	1,584	1,089	68.8	2,346	1,672	71.3	3,930	2,763	70.3	2.9	4.5	6.1	7.2	4.8	6.1
1998	1,638	1,147	70.0	2,428	1,709	70.4	4,067	2,856	70.3	3.4	5.2	3.5	2.2	3.4	3.4
***1999**	1,733	1,196	69.0	2,557	1,814	71.0	4,290	3,009	70.2	5.9	4.3	5.3	6.1	5.5	5.4
***2000**	1,810	1,244	68.7	2,715	1,922	70.8	4,525	3,165	70.0	4.4	4.0	6.2	5.9	5.5	5.2
***2001**	1,868	1,273	68.1	2,837	1,992	70.2	4,706	3,265	69.4	3.3	2.3	4.5	3.7	4.0	3.2
***2002**	1,923	1,291	67.1	2,961	2,049	69.2	4,883	3,339	68.4	2.9	1.4	4.3	2.8	3.8	2.3
***2003**	1,973	1,353	68.6	3,093	2,187	70.7	5,066	3,540	69.9	2.6	4.8	4.5	6.7	3.7	6.0

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

DEMAND TRENDS (1990=100)

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

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

COST INDICES (1990=100)

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

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

FINANCIAL TRENDS (1990=100)

	Inflation (1990=100)						Exchange rates (against US$)						LIBOR
	US	UK	Germany	France	Japan		UK	Germ.	France	Switz.	Euro**	Japan	6 month Euro-$
1990	100	100	100	100	100	**1990**	0.563	1.616	5.446	1.389	0.788	144.8	8.27%
1991	104	106	104	103	103	**1991**	0.567	1.659	5.641	1.434	0.809	134.5	5.91%
1992	107	107	109	106	105	**1992**	0.570	1.562	5.294	1.406	0.773	126.7	3.84%
1993	111	109	114	108	106	**1993**	0.666	1.653	5.662	1.477	0.854	111.2	3.36%
1994	113	109	117	110	107	**1994**	0.653	1.623	5.552	1.367	0.843	102.2	5.06%
1995	117	112	119	112	107	**1995**	0.634	1.433	4.991	1.182	0.765	94.1	6.12%
1996	120	114	121	113	107	**1996**	0.641	1.505	5.116	1.236	0.788	108.8	4.48%
1997	122	117	123	114	108	**1997**	0.611	1.734	5.836	1.451	0.884	121.1	5.85%
1998	123	120	124	115	109	**1998**	0.603	1.759	5.898	1.450	0.896	130.8	5.51%***
***1999**	125	122	126	116	108	**Sep 1999**	0.609	1.861	6.241	1.524	0.951	104.4	5.66%***

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

FREIGHTER LEASE RATES

Model	Age	Rental ($m)	Model	Age	Rental ($m)	Model	Age	Rental ($m)
A300F4	**1976-79**	**200-235**	**737-300QC**	**1986-91**	**240-270**	**DC8-63F**	**1968-71**	**80-120**
	1980-84	**215-245**		**1992-97**	**270-290**	**DC8-71F**	**1968-71**	**160-200**
A310-200F	**1982-88**	**195-235**	**747-200F**	**1971-78**	**230-280**	**DC8-73F**	**1968-71**	**180-220**
707-320CH	**1965-72**	**35-75**		**1985-91**	**365-455**	**DC-10-30F**	**1971-78**	**215-295**
727-100C	**1965-71**	**30-50**	**747-400F**	**1993-98**	**800-1095**		**1979-84**	**280-335**
727-100CH	**1965-71**	**45-70**	**757PF**	**1986-93**	**335-385**	**MD11F**	**1990-93**	**670-800**
727-200F	**1972-78**	**50-80**		**1994-98**	**365-400**		**1994-98**	**780-855**
	1979-83	**75-105**	**DC8-61F**	**1968-71**	**60-90**			

Source: Aircraft Value Journal, Sep/Oct 1999.

JET AND TURBOPROP ORDERS

	Date	Buyer	Order	Price	Delivery	Other information/engines
ATR	-					
Airbus	Oct 21	America West	15 A318s		Aug 2000+	+ 25 options and
			12 A320s			25 purchase rights for A320
	Oct 11	British Airways		12 A318s		Jan 2003+ + 12 options, PW6000
	Oct 11	Aero Lloyd	1 A320, 2 A321		2001	U2500
	Oct 27	El Al	3 A330			
BAe	Sep 30	Aegean	1 RJ100		Dec 1999	
	Sep 30	CityFlyer	2 RJ100s		Apr, May 00	+1 option
Boeing	Oct 12	Cathay Pacific	2 747-400F		Sep 00, Aug 01	RB211-524H
	Sep 30	Delta	18 737-800			
	Oct 21	El Al	3 777			
Bombardier	Oct 20	Atlantic Coast	3 CRJ 200s			
	Oct 1	Air Nippon	3 Dash8 Q300			
	Sep 30	Augsburg	2 Dash8 Q400			
	Sep 28	Palestinian	2 Dash8 Q300			
			2 CRJ 200			
Embraer	Sep 30	City Airlines	1 ERJ-135	$60m		+ 2 options
Fairchild Dornier	Oct 18	Locat	1 328Jet	$11.9	Apr 2000	For use by Air Vallee

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

	Group revenue US$m	Group costs US$m	Group operating profit US$m	Group net profit US$m	Total ASK m	Total RPK m	Load factor %	Group rev. per total ASK Cents	Group costs per total ASK Cents	Total pax. 000s	Total ATK m	Total RTK m	Load factor %	Group employees
American*														
Oct-Dec 97	4,228	3,871	357	208	63,308.3	42,715.7	67.5	6.68	6.11	19,681	9,366.9	5,025.2	53.6	88,302
Jan-Mar 98	4,229	3,802	427	290	62,405.4	41,846.6	67.1	6.78	6.09	19,267	9,207.0	4,889.4	53.1	87,569
Apr-Jun 98	4,497	3,889	608	409	64,471.8	46,075.9	71.5	6.98	6.03	20,901	9,512.3	5,317.6	55.9	87,076
Jul-Sep 98	4,583	3,958	625	433	65,920.1	48,093.9	73.0	6.95	6.00	21,457	9,739.3	5,466.1	56.1	89,078
Oct-Dec 98	4,152	3,857	295	182	64,317.3	43,811.6	68.1	6.46	6.00	19,805	9,526.7	5,060.1	53.1	90,460
Jan-Mar 99	3,991	3,954	37	158	62,624.3	41,835.4	66.8	6.37	6.31					
Apr-Jun 99	4,528	4,120	408	268	67,313.8	47,945.9	71.2	6.73	6.12					
America West														
Oct-Dec 97	473	432	41	20	9,573.7	6,219.9	65.0	4.94	4.51	4,375	1,200.4	670.1	55.8	11,232
Jan-Mar 98	483	434	49	25	9,408.0	5,851.4	62.2	5.13	4.61	4,149	1,180.7	630.2	53.4	11,329
Apr-Jun 98	534	457	77	41	9,787.8	6,899.1	70.5	5.46	4.67	4,643	1,228.9	733.0	59.7	11,645
Jul-Sep 98	499	453	46	22	9,884.3	7,108.3	71.9	5.05	4.58	4,665	1,240.4	746.9	60.2	11,600
Oct-Dec 98	507	470	37	20	10,037.2	6,491.9	64.7	5.05	4.68	4,335	1,261.2	688.1	54.6	11,687
Jan-Mar 99	520	469	51	26	10,135.4	6,485.5	64.0	5.13	4.63	4,263				
Apr-Jun 99	570	494	76	42	10,446.0	7,204.8	69.0	5.46	4.73	4,724				
Continental														
Oct-Dec 97	1,839	1,707	132	73	28,278.6	19,400.1	68.6	6.50	6.04	10,188	3,381.1	2,140.0	63.3	37,021
Jan-Mar 98	1,854	1,704	150	81	28,199.8	19,427.5	68.9	6.57	6.04	10,072	3,372.4	2,134.4	63.3	37,998
Apr-Jun 98	2,036	1,756	280	163	29,891.1	22,007.2	73.6	6.81	5.87	11,261	3,629.6	2,399.3	66.1	39,170
Jul-Sep 98	2,116	1,973	143	73	31,609.9	24,049.4	76.1	6.69	6.24	11,655	3,801.8	2,542.9	66.9	40,082
Oct-Dec 98	1,945	1,817	128	66	30,557.4	21,273.3	69.6	6.37	5.95	10,637	3,664.5	2,339.0	63.8	41,118
Jan-Mar 99	2,056	1,896	160	84	30,938.8	22,107.0	71.5	6.65	6.13	12,174				
Apr-Jun 99	2,198	1,942	256	137	32,448.3	24,009.1	74.0	6.77	5.98	11,493				
Delta														
Oct-Dec 97	3,433	3,101	332	190	56,177.4	38,854.9	69.2	6.11	5.52	25,464	7,941.4	4,639.6	58.4	69,982
Jan-Mar 98	3,390	3,053	337	195	54,782.2	37,619.0	68.7	6.19	5.57	24,572	7,766.6	4.448.9	57.3	71,962
Apr-Jun 98	3,761	3,167	594	362	57,175.5	43,502.6	76.1	6.58	5.54	27,536	8,189.9	5,049.5	61.7	74,116
Jul-Sep 98	3,802	3,250	552	327	59,017.9	45,242.3	76.7	6.44	5.51	27,575	8,486.8	5,196.9	61.2	75,722
Oct-Dec 98	3,448	3,128	320	194	57,810.9	39,947.7	69.1	5.96	5.41	25,531	8,244.1	4,699.3	57.0	76,649
Jan-Mar 99	3,504	3,148	356	216	56,050.3	39,163.9	69.9	6.25	5.62					
Apr-Jun 99	3,957	3,315	642	364	57,957.3	43,422.1	74.9	6.83	5.72					
Northwest														
Oct-Dec 97	2,491	2,264	227	105	38,465.5	27,791.0	72.2	6.48	5.89	13,383	6,247.0	3,820.5	61.2	48,852
Jan-Mar 98	2,429	2,273	156	71	38,260.1	27,038.2	70.7	6.35	5.94	12,704	6,052.7	3,513.4	58.0	49,776
Apr-Jun 98	2,475	2,355	120	49	38,332.7	29,533.7	77.0	6.46	6.14	13,676	6,102.8	3,745.5	61.4	51,264
Jul-Sep 98	1,928	2,204	-276	-224	32,406.3	24,295.8	75.0	5.95	6.80	11,148	5,107.4	3,058.6	59.9	50,654
Oct-Dec 98	2,212	2,404	-192	-181	37,947.0	26,534.3	69.9	5.83	6.34	12,962	6,125.2	3,588.9	58.6	50,503
Jan-Mar 99	2,281	2,295	-14	-29	37,041.3	26,271.8	70.9	6.16	6.20					
Apr-Jun 99	2,597	2,333	264	120	40,541.5	30,900.2	76.2	6.41	5.75					
Southwest														
Oct-Dec 97	975	847	128	81	18,501.4	11,654.2	63.0	5.27	4.58	12,612	2,361.5	1,222.6	51.8	24,454
Jan-Mar 98	943	831	112	70	18,137.1	11,102.3	61.2	5.20	4.58	11,849	2,304.2	1,161.6	50.4	24,573
Apr-Jun 98	1,079	870	209	133	18,849.6	13,236.7	70.2	5.72	4.62	13,766	2,394.0	1,378.0	57.6	24,807
Jul-Sep 98	1,095	891	204	130	19,762.1	13,620.3	68.9	5.54	4.51	13,681	2,519.0	1,420.4	56.4	25,428
Oct-Dec 98	1,047	888	159	100	19,763.0	12,603.4	63.8	5.30	4.49	13,291	2,504.1	1,317.4	52.6	26,296
Jan-Mar 99	1,076	909	167	96	19,944.0	12,949.2	64.9	5.40	4.56	12,934				
Apr-Jun 99	1,220	966	254	158	20,836.9	15,241.7	73.1	5.85	4.64	14,817				
TWA														
Oct-Dec 97	813	812	1	-31	14,348.8	9,570.2	66.7	5.67	5.66	5,743	1,966.4	1,098.0	55.8	22,322
Jan-Mar 98	765	834	-69	-56	13,626.4	9,276.3	68.1	5.61	6.12	5,629	1,879.7	1,046.5	55.7	22,198
Apr-Jun 98	884	838	46	19	14,142.2	10,787.3	76.3	6.25	5.93	6,417	1,979.0	1,186.2	59.9	22,147
Jul-Sep 98	863	839	24	-5	14,293.8	10,531.3	73.7	6.04	5.87	6,273	1,999.7	1,150.0	57.5	21,848
Oct-Dec 98	747	813	-66	-79	13,452.4	8,731.6	64.9	5.55	6.04	5,574	1,863.7	982.8	52.7	21,321
Jan-Mar 99	764	802	-38	-22	13,352.4	9,205.2	68.9	5.72	6.01					
Apr-Jun 99	866	848	18	-6	14,274.4	11,130.9	78.0	6.07	5.94					
United														
Oct-Dec 97	4,235	4,144	91	23	68,364.7	47,419.6	69.4	6.19	6.06	20,608	10,269.1	6,023.6	58.7	91,721
Jan-Mar 98	4,055	3,932	123	61	66,393.3	44,613.0	67.2	6.11	5.92	19,316	9,987.5	5,589.7	56.0	92,581
Apr-Jun 98	4,442	3,972	470	282	69,101.7	50,152.2	72.6	6.43	5.75	21,935	10,453.0	6,202.6	59.3	94,064
Jul-Sep 98	4,783	4,088	695	425	73,913.5	56,283.7	76.1	6.47	5.53	23,933	11,255.3	6,847.4	60.8	94,270
Oct-Dec 98	4,281	4,090	191	54	70,620.9	49,484.4	70.1	6.06	5.79	21,616	10,774.4	6,182.8	57.4	94,903
Jan-Mar 99	4,160	4,014	146	78	67,994.5	46,899.8	69.0	6.12	5.90					
Apr-Jun 99	4,541	4,108	433	669	71,573.6	50,198.9	70.1	6.34	5.74					
US Airways														
Oct-Dec 97	2,085	2,015	70	479	22,662.2	15,800.1	69.7	9.20	8.89	14,178	3,066.2	1,733.2	56.5	40,865
Jan-Mar 98	2,063	1,871	192	98	22,102.1	15,257.8	69.0	9.33	8.47	13,308	2,993.8	1,669.2	55.8	40,974
Apr-Jun 98	2,297	1,923	374	194	22,818.3	17,567.1	77.0	10.07	8.43	15,302	3,107.6	1,895.9	61.0	40,846
Jul-Sep 98	2,208	1,938	270	142	23,267.3	17,639.5	75.8	9.49	8.33	15,290	3,166.1	1,898.2	60.0	40,660
Oct-Dec 98	2,121	1,943	178	104	23,318.8	16,112.3	69.1	9.10	8.33	14,202	3,171.1	1,754.5	55.3	40,664
Jan-Mar 99	2,072	1,983	89	46	22,745.8	15,405.8	67.7	9.11	8.72					
Apr-Jun 99	2,286	2,007	279	317	23,891.7	17,557.5	73.5	9.57	8.40					
ANA														
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	3,459	3,545	-86	-68	40,446.9	26,187.7	64.7	8.55	8.76	20,102				
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	3,399	3,355	44	73	42,415.9	27,404.4	64.6	8.01	7.91	21,449				
Oct-Dec 98														
Jan-Mar 99														
Apr-Jun 99														
Cathay Pacific														
Oct-Dec 97	1,921	1,784	137	117	28,932.0	18,917.0	64.4	6.64	6.17	4,810	5,325.0	3,718.0	69.8	
Jan-Mar 98	SIX MONTH FIGURES													
Apr-Jun 98	1,677	1,682	-5	-20	28,928.0	19,237.0	66.5	5.80	5.81		5,208.0	3,481.0	66.8	
Jul-Sep 98	SIX MONTH FIGURES													
Oct-Dec 98	1,769	1,713	56	-45	31,367.0	21,173.0	67.5	5.64	5.46		5,649.0	3,847.0	68.1	
Jan-Mar 99														
Apr-Jun 99														
JAL														
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	4,279	4,344	-65	-911	56,514.7	39,012.2	69.0	7.57	7.69	15,344	8,570.8	5,628.5	65.7	
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	4,463	4,262	201	133	58,439.5	40,413.9	69.2	7.64	7.29	16,008	8,959.7	5,725.4	63.9	
Oct-Dec 98														
Jan-Mar 99														
Apr-Jun 99														

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

	Group revenue US$m	Group costs US$m	Group operating profit US$m	Group net profit US$m	Total ASK m	Total RPK m	Load factor %	Group rev. per total ASK Cents	Group costs per total ASK Cents	Total pax. 000s	Total ATK m	Total RTK m	Load factor %	Group employees
Korean Air														
Oct-Dec 97	4,569	4,184	385	-424	53,782.5	38,185.6	71.0	8.50	7.78	23,740		8,428.4		17,439
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	TWELVE MONTH FIGURES													
Oct-Dec 98	3,283	3,064	219	212	58,246.4	40,190.3	69.0	5.64	5.26	25,557		9,484.0		17,050
Jan-Mar 99														
Apr-Jun 99														
Malaysian														
Oct-Dec 97	TWELVE MONTH FIGURES													
Jan-Mar 98	2,208	2,289	-81	-81	42,294.0	28,698.0	67.9	5.22	5.41	15,117	6,411.0			
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	860	958	-98	-11			57.2							
Oct-Dec 98														
Jan-Mar 99														
Apr-Jun 99														
Singapore														
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	2,336	2,080	256	258	39,093.6	26,224.3	67.1	5.98	5.32	5,822	7,303.0	4,951.5	67.8	
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	2,232	2,013	219	278	41,466.2	29,456.2	71.0	5.38	4.86	6,240	7,693.4	5,225.2	67.9	
Oct-Dec 98	SIX MONTH FIGURES													
Jan-Mar 99	2,421	2,130	291	341	41,725.5	30,843.7	73.9	5.80	5.10	6,537	7,958.5	5,540.3	69.6	
Apr-Jun 99														
Thai Airways														
Oct-Dec 97	656	649	7	-661	12,144.0	7,715.0	63.5	5.40	5.34	3,800	1,712.0			
Jan-Mar 98	631	558	73	610	12,211.0	8,522.0	69.8	5.17	4.57	4,000	1,715.0			
Apr-Jun 98	586	583	3	-121	12,084.0	7,963.0	65.9	4.84	4.82		1,700.0			
Jul-Sep 98	629	584	45	176	12,118.0	8,769.0	72.4	5.19	4.82					
Oct-Dec 98	727	647	80	170	12,599.0	9,195.0	73.0	5.77	5.14					
Jan-Mar 99														
Apr-Jun 99														
Air France														
Oct-Dec 97	SIX MONTH FIGURES													
Jan-Mar 98	5,126	5,079	47	18										
Apr-Jun 98	SIX MONTH FIGURES													
Jul-Sep 98	5,088	4,894	194	228	49,724.0	38,070.0	76.6	10.23	9.84					
Oct-Dec 98	SIX MONTH FIGURES													
Jan-Mar 99	5,550	5,552	-2	56	51,394.0	38,242.0	74.4	10.80	10.80					
Apr-Jun 99														
Alitalia														
Oct-Dec 97	5,083	4,878	205	161	50,171.4	35,992.3	71.7	10.13	9.72	24,552				18,676
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	TWELVE MONTH FIGURES													
Oct-Dec 98	5,152	4,432	720	235	51,638.4	35,427.2	68.8	9.98	6.86	24,103				18,825
Jan-Mar 99														
Apr-Jun 99														
BA														
Oct-Dec 97	3,580	3,436	144	110	40,059.0	26,929.0	67.2	8.94	8.58	9,837	5,618.0	3,791.0	67.5	61,144
Jan-Mar 98	3,335	3,210	125	119	39,256.0	26,476.0	67.4	8.50	8.18	9,311	5,485.0	3,642.0	66.4	60,770
Apr-Jun 98	3,783	3,497	286	217	44,030.0	31,135.0	70.7	8.59	7.94	11,409	6,174.0	4,157.0	67.3	62,938
Jul-Sep 98	4,034	3,601	433	357	46,792.0	35,543.0	76.0	8.62	7.70	12,608	6,533.0	4,630.0	70.9	64,106
Oct-Dec 98	3,585	3,431	154	-114	44,454.0	29,736.0	66.9	8.06	7.72	10,747	6,277.0	4,111.0	65.5	64,608
Jan-Mar 99	3,343	3,481	-138	-119	43,544.0	29,537.8	67.8	7.68	7.99	10,285	6,130.0	3,933.0	64.2	64,366
Apr-Jun 99	3,527	3,378	149	302	45,813.0	32,032.0	69.9	7.70	7.37	11,733	6,437.0	4,215.0	65.5	65,179
Iberia														
Oct-Dec 97	4,168	3,900	268	96	37,797.6	27,679.2	73.2	11.03	10.32	15,432		3,313.0		21,525
Jan-Mar 98														
Apr-Jun 98														
Jul-Sep 98	TWELVE MONTH FIGURES													
Oct-Dec 98	4,451	4,100	351	356	45,041.6	32,520.0	72.2	9.88	9.10	21,753		3,740.0		22,065
Jan-Mar 99														
Apr-Jun 99														
KLM														
Oct-Dec 97	1,630	1,570	60	23	18,096.0	13,555.0	74.9	9.01	8.68		3,114.0	2,414.0	77.5	35,092
Jan-Mar 98	1,538	1,568	-30	528	17,595.0	13,240.0	75.2	8.74	8.91		2,995.0	2,259.0	75.4	33,227
Apr-Jun 98	1,702	1,572	130	105	18,600.0	14,290.0	76.8	9.15	8.45		3,177.0	2,365.0	74.4	35,666
Jul-Sep 98	1,865	1,675	190	121	19,363.0	15,984.0	82.6	9.63	8.65		3,359.0	2,583.0	76.9	33,586
Oct-Dec 98	1,673	1,661	12	-15	18,476.0	13,767.0	74.5	9.05	8.99		3,214.0	2,415.0	75.1	33,761
Jan-Mar 99	1,550	1,670	-120	-45	17,716.0	13,294.0	75.0	8.75	9.43		3,088.0	2,284.0	74.0	33,892
Apr-Jun 99	1,626	1,547	79	37	18,778.0	14,302.0	76.2	8.66	8.24		3,253.0	2,427.0	74.6	34,980
Lufthansa* **														
Oct-Dec 97	3,989	3,566	423	384*	30,209.0	21,691.0	71.8	13.20	11.80	10,839	5,457.0	3,919.0	71.8	59,630
Jan-Mar 98	2,902	2,860	42	223	23,742.0	16,236.0	68.4	12.22	12.05	8,778	4,618.0	3,171.0	68.7	54,849
Apr-Jun 98	3,507	3,081	426	289	26,132.0	19,489.0	74.6	13.42	11.79	10,631	5,078.0	3,575.0	70.4	54,556
Jul-Sep 98	3,528	3,167	361	198	26,929.0	20,681.0	76.8	13.10	11.76	11,198	5,231.0	3,748.0	71.6	54,695
Oct-Dec 98	2,929	2,106	823	96	25,530.0	18,259.0	71.5	11.47	8.25	9,819	5,204.0	3,676.0	70.6	55,368
Jan-Mar 99	3,301	3,210	91	64	25,445.0	17,942.0	70.5	12.97	12.62	9,658	4,972.0	3,435.0	69.1	56,420
Apr-Jun 99	3,322	3,012	310	97	30,500.0	22,279.0	73.0	10.89	9.86	11,444	5,626.0	3,993.0	71.0	53,854
SAS														
Oct-Dec 97	1,334	1,204	130	63*	7,771.0	4,940.0	63.6	17.17	15.49	5,211				28,716
Jan-Mar 98	1,184	1,077	106	76*	7,761.0	4,628.0	59.6	15.25	13.88	4,863				24,722
Apr-Jun 98	1,323	1,149	174	107*	7,546.0	5,260.0	69.7	17.53	15.23	5,449				25,174
Jul-Sep 98	1,283	1,152	131	127*	8,283.0	5,843.0	70.5	15.49	13.91	5,714				26,553
Oct-Dec 98	1,368	1,266	102	46*	8,116.0	5,089.0	62.7	16.86	15.60	5,431				27,071
Jan-Mar 99	1,203	1,227	-24	-3*	8,062.0	4,713.0	58.5	14.92	15.22	5,017				27,110
Apr-Jun 99	1,357	1,294	63	60*	8,466.0	5,571.0	65.8	16.03	15.28	5,850				27,706
Swissair**														
Oct-Dec 97	2,084	1,946	138	147	18,934.8	13,770.8	72.7	11.01	10.28	6,352	3,536.4	2,538.1	71.8	10,132
Jan-Mar 98	SIX MONTH FIGURES													
Apr-Jun 98	1,907	1,780	127	86	18,983.8	13,138.7	70.5	10.05	9.38	6,922				9,756
Jul-Sep 98	SIX MONTH FIGURES													
Oct-Dec 98	2,187	2,070	117	165	20,476.8	15,391.3	75.2	10.68	10.11	5,277				10,396
Jan-Mar 99	SIX MONTH FIGURES													
Apr-Jun 99	1,932	1,877	55	57	23,411.0	16,130.0	68.9	8.25	8.02	7,784				10,715

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

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