Aviation Strategy

Issue No: 48 October 2001

Post September 11 - Tragic times

Coming to terms with the terrorism of September 11 is possible, but it's terribly difficult. To the families and friends of all those innocent victims of this unspeakable cruelty, we can only offer our deepest sympathy and condolences.

In writing about the post-September 11 aviation market publications like *Aviation Strategy* find themselves in a peculiar situation. Suddenly the global media, even the tabloids, are trying to analyse the aviation industry - some of it very good and some banal.

For our part, we have tried to put some numbers of the extent of the traffic downturn and the effect on the global supply/demand balance - see pages 2-7. Inevitably, this is tentative at present and we would welcome feedback from our subscribers. We can create alternative scenarios using different assumptions.

There are also many issues which we have not had a chance to address properly yet. In particular, the whole financial basis of the industry seems to be wobbly.

As a consequence of the Swissair/Crossair rescue plan (see pages 8-9), the cost of capital for the whole industry will have been substantially increased. Creditors of what used to be a premier European flag-carrier will probably never get their money back or at least will have to go through protracted litigation. And what possible incentive will trade investors have for buying into flag-carriers if they can simply be re-nationalised? This has happened to Air New Zealand, which was only peripherally affected by September 11.

At the same time as the industry's cost of capital goes through the ceiling, the US dollar prime rate has been cut to zero in real terms. Zero interest rates, as the Japanese experience shows, means asset deflation.

So how do the lessors react? This may mean that the lessors are not be facing just a dramatic cyclical adjustment but a long-term depression in values. They are also going to have to absorb somehow a large volume of distressed jets. Even being owned by an insurance giant like AIG no longer looks like such a rock-solid idea.

As for the manufacturers, our only suggestion is that they rent plenty of desert space to park their output for the next 12-18 months. But if they help the airlines deal with this crisis, as they must, there will be a rebound, maybe a strong rebound in new aircraft demand in, we guess, 2003.

www.aviationeconomics.com

CONTENTS

Analysis

Global demand outlook **2-4**

The potential market imbalance **5-7**

Short-term delivery schedule **6**

Chapter 11 domino threat **7-8**

Swissair's audacious rescue plan **9-10**

Briefing

European carriers post Septmber 11 **11-15**

Management

The management of tragedy **16-17**

Airport security - who is that passenger? **18-19**

Macro trends **20-21**

Micro trends **22-23**

PUBLISHER

Aviation Economics
James House, LG,
22/24 Corsham Street
London N1 6DR
Tel: +44 (0) 20 7490 5215
Fax: +44 (0) 20 7490 5218
e-mail: info@aviationeconomics.com

Global demand outlook

Aviation Strategy is published 12 times a year by *Aviation Economics* on the first of each month

Editor: Keith McMullan

Subscription enquiries: Keith McMullan Tel: +44 (0) 20 7490 5215

Aviation Economics Registered No: 2967706 (England)

Registered Office: James House, LG 22/24 Corsham St London N1 6DR VAT No: 701780947

ISSN 1463-9254

Immediately after September 11, the airline industry was completely traumatised - it seemed that demand for air travel had evaporated for ever and that all airlines would have to adapt to a profoundly changed market. This scenario may still prove to be correct, but it is looking increasingly unlikely as time goes on.

The alternative view is that that the industry will recover as it has done in the wake of previous terrorism, Chernobyl and Middle East wars. The closest relevant experience is the Gulf war of 1991, though this time the repercussions are going to be deeper and probably longer. What we are suggesting is that the September 11 impact will be something like double the Gulf war effect rather than the Gulf war effect squared. Of course, if there are further serious air terror attacks, then all bets are off.

So, as a reminder of what happened to traffic ten years ago, we present this table.

It's not a completely clear picture. European airlines took the brunt of the traffic collapse in 1991; international passengers disappeared but then they surged back in 1992. Bizarrely, there was also a boom in intra-European business in 1991 as travel patterns altered and some capacity was redeployed.

US international traffic also went negative in 1991 but the big hit was in the domestic market, as the US economy had entered a serious recession (US GDP was -0.2%). 1992 saw a big rebound in international and a reasonable recovery in domestic.

Asia/Pacific carriers felt the impact of the Gulf war but still maintained marginal international growth, while intra-region traffic continued to soar. Overall, 1991 traffic growth was respectable; 1992 was very good indeed.

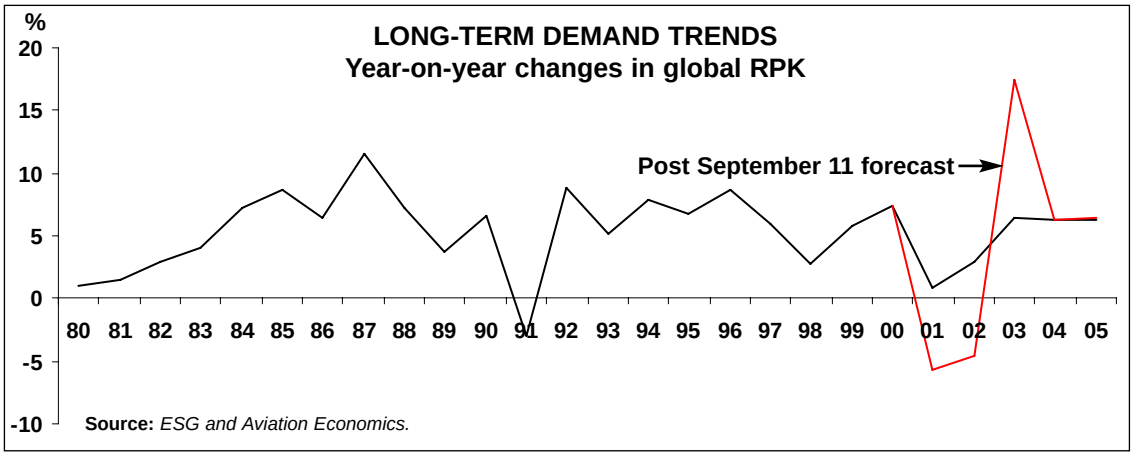
The 1992 rebound - 9% globally - restored world traffic growth rates to what they might have been expected to be, absent the Gulf war. Yet behind the global figure were all sorts of regional and structural complications. For instance, the state-owned European carriers were able to buy back traffic without worrying too much about adjusting their cost bases, strategies which had to be supported by state aid packages and painful restructuring plans (with greatly varying degrees on success). The foundations were laid for Air France, to take the most notable example, to build a true hub and spoke system at CDG. The subsequent fall in operating lease rates and the sudden availability of flying crew and airport space created the conditions for the emergence which the new wave of low cost carriers

By contrast, in the US the shock of the Gulf war, coinciding with a severe

THE GULF WAR EXPERIENCE

	Average 1981-90	1991	1992	Average 1991-00
INTERNATIONAL				
US airlines	7.1%	-0.9%	11.0%	4.3%
European airlines	6.0%	-11.2%	18.0%	7.2%
Asia/Pacific airlines	8.1%	0.3%	16.3%	8.3%
Domestic/Intra-region				
DOMESTIC/INTRA-REGION				
US airlines	5.4%	-2.3%	4.9%	4.1%
European airlines	6.8%	11.1%	8.6%	8.5%
Asia/Pacific airlines	7.0%	13.1%	8.1%	7.7%
Total				
TOTAL				
US airlines	5.4%	-1.9%	6.6%	4.1%
European airlines	6.1%	-8.5%	16.7%	7.4%
Asia/Pacific airlines	7.7%	4.3%	13.5%	8.1%
WORLD*	5.9%	-2.9%	8.9%	5.8%

Source: *ICAO and ESG.* **Note:** **Includes rest of world.*



economic downturn and following on from the merger frenzy of the 80s, caused the US Majors to rethink the "boom and bust" trap. The strategies of combining low capacity growth with cost control and strong yield management had their origins in the crisis of the early 90s, and generally worked very well until this year when they were clearly unravelling.

In order to estimate the impact of September 11 on global air traffic development, we have built a mini-model which uses data originally compiled by ESG* from ICAO sources. The idea is that different assumptions about the initial, short term, rebound and medium term traffic rates can be plugged in and regional and global rates will be generated. We intend to use this model to track the development of the market over the following months.

Overall we are showing an unprecedented initial fall in traffic, which follows on from a mostly flat first eight month of the year. We estimate more moderate declines in the first eight months of next year, followed by an upturn in the final four months (remembering that the change in traffic is generated from a very depressed base).

The initial and short term declines estimated for the US industry are in line with those presented by Leo Mullin on behalf of the ATA to Congress of September 19. The effect on European and Asian airlines will be less marked, and domestic operations should be relatively unscathed. The rest of the world shows a steeper decline because Middle East airlines are included in this group.

There is an amazing amount of noise in the market at the moment as airlines are not only suffering genuine distress but also taking this opportunity to restructure radically and present their plight to governments in the most forceful way. Hence, we are not clear as to whether these estimates are optimistic or pessimistic.

We assume that the full rebound takes place in 2003,18-24 months after the disaster impact. The post Gulf war rebound occurred 6-12 months after full-scale conflict in Kuwait and Iraq.

The rebound rates are generated by find-

* *Airline Monitor*, July 2001, Commercial aircraft forecast. published by ESG

POST SEPTEMBER 11 TRAFFIC ASSUMPTIONS

	US Dom	US Int	Euro Dom	Euro Int	Asian Dom	Asian Int	RoW Dom	RoW Int
Initial (Sept-Dec 2001)	-30%	-40%	-10%	-20%	-5%	-10%	-5%	-15%
Short term (Jan-Aug 2002)	-10%	-20%	-5%	-10%	-2%	-5%	-3%	-10%
Short term Sept-Dec 2002)	5%	10%	5%	10%	5%	5%	5%	5%
Rebound (2003)	15%	20%	7%	20%	15%	20%	12%	20%
Medium term average (2004-06)	4%	6%	5%	6%	9%	9%	5%	8%

POST SEPTEMBER 11 TRAFFIC FORECAST
Year-on-year changes in global RPK

	US Dom	US Int	US Total	Euro Dom	Euro Int	Euro Total	Asian Dom	Asian Int	Asian Total	World Dom	World Int	World Total
2000	6%	7%	**6%**	2%	7%	**7%**	9%	11%	**11%**	5%	9%	**7%**
2001	-10%	-12%	**-11%**	-3%	-6%	**-6%**	1%	0%	**0%**	-6%	-5%	**-6%**
2002	-6%	-13%	**-8%**	-2%	-4%	**-4%**	0%	-2%	**-1%**	-4%	-5%	**-5%**
2003	15%	20%	**16%**	7%	20%	**18%**	15%	20%	**18%**	14%	20%	**17%**
2004	4%	6%	**5%**	5%	6%	**6%**	9%	9%	**9%**	5%	7%	**6%**
2005	4%	6%	**5%**	5%	6%	**6%**	9%	9%	**9%**	5%	7%	**6%**

ing the growth rate that restores European and Asian traffic to the level it would have been expected to be had September 11 not happened. In other words, European and Asian airlines re-capture 100% of lost traffic. For the US we are assuming only a 90% recapture, recognising that some form of structural change in Americans' propensity to fly has occurred.

This table above summarises the outlook for regional and global traffic.

The industry would appear to be facing two years of global negative growth, 6% this year and 5% next, before the putative 2003 rebound.

Two years of global negative growth is unprecedented though the newly deregulated US industry experienced something similar in 1980-81. Similarly unprecedented is the 17% rebound in 2003 (though the European carriers did achieve 18% internationally in 1992). In reality such an annual total is unlikely as the rebound, assuming it takes place in the way we have predicted, will not fit neatly into a calendar year.

Yet another unknown is how the events of September 11 will affect the economic cycle. In the last issue (how long ago that seems) we were talking about a soft landing for the major economies. Now some form of V-shaped recession seems more likely, with the recovery boosted by government spending and softer monetary policies. This seems consistent with our sharp aviation rebound thesis.

In the next article we look at how all this impacts the global supply and demand balance.

Can the cavernous supply/demand gap be managed?

The demand numbers are disturbing enough, but factoring in the supply side reveals a market that is now totally out of balance. To avoid the emergence of a surplus of jet aircraft more than twice as large as that of the early 90s, the manufacturers will have to take drastic action.

First of all, the methodology: in order to arrive at an estimate of aircraft demand, the forecast RPK totals are converted into ASKs using 2000 load factors (representative of a balanced market). These ASKs are then converted into average jet units by dividing by average utilisation (as in 2000), speed and average seats. This can be regarded as measure of demand for jets in a balanced market.

So, based on our traffic predictions, the industry is facing a cumulative fall in demand of over 700 units during 2001/02 (see table above). At the same time, some 2,400 new jets have been or are scheduled for delivery during this period (note that the delivery estimates take account of the cutbacks already

MARKET BALANCE PROJECTIONS

	Change in aircraft demand	Scheduled deliveries* Boeing	Airbus	RJs	Total	Deletions	Balance change**	Theoretical surplus***	As % of supply	Adjusted surplus	Required changes****
2000								600	**4%**		
2001	-311	440	350	330	1,120	-270	1,161	1,761	**11%**	**11%**	
2002	-414	410	350	300	1,060	-300	1,174	2,936	**18%**	**11%**	-1,200
2003	2,157	410	350	380	1,140	-330	-1,347	1,588	**9%**	**5%**	400
2004	967	410	350	400	1,160	-370	-177	1,411	**8%**	**6%**	400
2005	1,020	410	350	400	1,160	-420	-280	1,131	**6%**	**4%**	

Note: **Incorporates announced cutbacks. **Positive change = increase in surplus. ***Assumes full deliveries as scheduled. ****Assumes 800 delivery postponements from 2001/02 to 2003/04, plus one-off scrapping increase of 400 units.*

announced by the manufacturers). Estimated "normal" deletions would total just over 600.

As a consequence, the theoretical surplus soars from an estimated 600 units at the end of last year to a theoretical 2,900 at the end of 2002. This is equivalent to 18% of supply, and is frankly inconceivable (in 1991 the surplus was 9%).

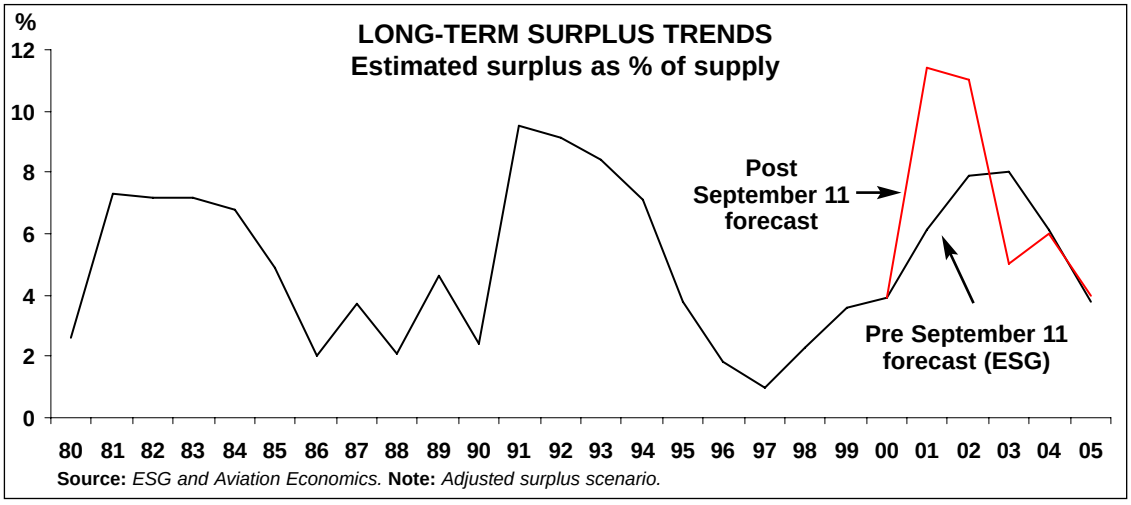
To get back to a 11% surplus, which is still pretty bad, somehow 1,200 units have to be taken out of the market.

Increased scrapping is probable, but past experience suggests that market imbalance is never neatly resolved by a massive scrapping of old types. Nevertheless, perhaps an additional 400 or so of elderly 727s, 737-200s, 747-200s and DC-9s could assigned to the aluminium smelters in addition to the normal scrapping rate.

This then leaves about 800 units due to be delivered up to the end of 2002 which will have to be cancelled or more likely deferred (the final column in the table above shows deliveries to operators being postponed to 2003 and 2004).

The implication is a 45% decrease in output, much greater that that mooted by the manufacturers. Boeing is talking about a 25% decline in planned output in 2002; Embraer is contemplating a 35% cutback; Airbus, remarkably, is sticking to a 10% reduction from forecast 2002 output.

It may be enlightening to look at the delivery schedule in more detail - see page 6. The obvious observation is that US carriers, both Majors and regional affiliates, dominate the picture, accounting for 16 of the top 20 operators due to take new aircraft in the period up to the end of 2002. Given their parlous condition, how many aircraft do the manufacturers really expect them to take in the short term? Southwest, the healthiest by some way of the US Majors, is currently



Source: *ESG and Aviation Economics.* **Note:** *Adjusted surplus scenario.*

SCHEDULED DELIVERIES SEP 2001- DEC 2002

	CRJ	Emb	Do	BAE	**RJs**	717	737	747	757	767	777	**Boeing**	A600	A320	A330	A340	**Airbus**	**TOTAL**
Continental Exp.		68			**68**							**0**					**0**	**68**
United					**0**					1	8	**9**		59			**59**	**68**
American					**0**		29		17	4	10	**60**					**0**	**60**
Atlantic Coast	26		33		**59**							**0**					**0**	**59**
Continental					**0**		28		13	13	1	**55**					**0**	**55**
Northwest	12				**12**			2	9			**11**		30			**30**	**53**
ILFC					**0**		5	1			9	**15**		30	5		**35**	**50**
American Eagle	11	34			**45**							**0**					**0**	**45**
Skywest (US)	44				**44**							**0**					**0**	**44**
Delta Air Lines					**0**		36			5	1	**42**					**0**	**42**
GECAS	10				**10**		13			4		**17**		10	4		**14**	**41**
Comair	39				**39**							**0**					**0**	**39**
Southwest					**0**		39					**39**					**0**	**39**
ATA					**0**		29		8			**37**					**0**	**37**
ASE	32				**32**							**0**					**0**	**32**
Iberia					**0**							**0**		27		3	**30**	**30**
Mesa	10	20			**30**							**0**					**0**	**30**
Express Airlines	29				**29**							**0**					**0**	**29**
Air Canada					**0**					1		**1**		26	1		**27**	**28**
Air France					**0**			1			7	**8**		12	7		**19**	**27**
Air Wisconsin	27				**27**							**0**					**0**	**27**
SAS					**0**		8					**8**		8	1	6	**15**	**23**
BA					**0**						3	**3**		19			**19**	**22**
JetBlue					**0**							**0**		22			**22**	**22**
LanChile					**0**					1		**1**		16		4	**20**	**21**
Korean Air					**0**		6	6			3	**15**			5		**5**	**20**
Airtran					**0**	19						**19**					**0**	**19**
UPS					**0**							**0**	19				**19**	**19**
Asiana					**0**			3			7	**10**		4	4		**8**	**18**
Ana					**0**					7	6	**13**		3		0	**3**	**16**
Horizon Air	16				**16**							**0**					**0**	**16**
Varig					**0**		8			4	4	**16**					**0**	**16**
Eurowings	15				**15**							**0**					**0**	**15**
Luft Cityline	15				**15**							**0**					**0**	**15**
LTU					**0**							**0**		8	6		**14**	**14**
Pembroke					**0**	14						**14**					**0**	**14**
Crossair		11			**11**							**0**		2			**2**	**13**
Sabena					**0**							**0**		9		4	**13**	**13**
SIA					**0**			1			12	**13**					**0**	**13**
Tam					**0**							**0**		13			**13**	**13**
Flightlease					**0**		5					**5**		4	3		**7**	**12**
Regional		12			**12**							**0**					**0**	**12**
Easyjet					**0**		11					**11**					**0**	**11**
Frontier					**0**							**0**		11			**11**	**11**
Ryanair					**0**		11					**11**					**0**	**11**
Virgin Blue					**0**		11					**11**					**0**	**11**
Chautauqua		10			**10**							**0**					**0**	**10**
China Northern					**0**							**0**		10			**10**	**10**
Emirates					**0**						5	**5**			5		**5**	**10**
Midway	2				**2**		8					**8**					**0**	**10**
Others*	38	33	19	5	**95**	14	106	26	3	7	13	**169**	0	119	19	17	**155**	**419**
Grand Total	**326**	**188**	**52**	**5**	**571**	**47**	**353**	**40**	**50**	**47**	**89**	**626**	**19**	**442**	**60**	**34**	**555**	**1,752**

Source: ACAS

*Note: * Orders of less than 10 units*

refusing to take 11 737s due for hand-over this year. Nor can the manufacturers take much comfort from many of the European carriers which too will postpone deliveries and even go bankrupt.

There will be plenty of surplus second-hand aircraft for the still aggressive low-cost carriers like Ryanair to mop up without turning to the manufacturers (it has has 600 offers in response to its advert for 50 737s). The Regional Jet phenomenon will certainly be slowed but there is the possibility that they will benefit from a downsizing trend from 150-seater types to RJs.

The lessors, notably ILFC and GECAS, also have substantial delivery positions (91 units), and even before September 11 there was speculation about their ability to negotiate deferred deliveries if the recession deepened. Now it is difficult to see how the lessors can take these scheduled deliveries in the short term; they have their own problems - up to the end of 2002 they face about 130 aircraft scheduled to come off lease before dealing with the inevitable distressed returns.

So, while most of the attention so far has focused on the plight of airlines, the manufacturers and lessors could well be facing an equally difficult time. In fact, their adjustment process may be more complicated as the production lines cannot be just shut down then suddenly ramped up to record production rates to meet the expected demand rebound in 2003 or whenever.

The Chapter 11 domino threat

The US Congress accepted the inevitable when it put together an emergency state aid package for its industry.

The key elements of the Air Transportation Safety and System Stabilization Act are as follows:

• $5bn in immediate grants allocated according to capacity (about $4bn to the Majors);
• $10bn in loan guarantees to airlines near bankruptcy;
• Limitations on airlines' liability for the attacks to the maximum of their insurance coverage;
• Government guaranteed war risk insurance for 180 days and reimbursement for premium increases;
• Airlines receiving loan guarantees have to give the government purchase options in their companies, the intention being that the government will have the opportunity to benefit from a restoration in the industry's fortunes;
• DoT is authorised to audit losses estimated or reported by the airlines; and
• A two-year pay freeze for executives of airlines getting loan guarantees if they already are paid more than $300,000 a year.

As an immediate response to an impossi-

US FINANCIAL FORECASTS ($m)

	Tangible equity	Cash & short-term invest.	Working capital	Pre-Sept 11 est. 2001 earnings	Post-Sept 11 est. 2001 earnings
Southwest	3,822	968	-300	550	418
Delta	2,813	1,510	-3,165	-460	-804
United	4,061	1,280	-3,657	-1,150	-1,685
American	5,329	1,487	-2,720	-550	-1,133
Continental	195	1,008	-1,001	110	-100
Northwest	-606	1,350	-1,345	-270	-522
US Airways	-1,371	1,250	-369	-570	-816
Alaska	782	371	-18	-15	-66
Am West	329	174	-234	-70	-129
Industry	15,354	9,398	-12,809	-2,425	-4,837

Source: *V. Cordle/Planebusiness.com*

ble situation the US government package looks reasonable, but is it enough to prevent the Chapter 11 domino effect. In this scenario once the weakest carriers (US Airways, then Northwest then America West) has sought Chapter 11, other carriers which might have been able to continue trading normally will also be tempted in Chapter 11 in order to avoid increased fare competition from the creditor-protected airlines.

Early estimates of the impact of September 11 on the US Majors' finances show a predicted net loss for 2001 of nearly $5bn compared to previous predictions of $2.4bn (which was very poor in itself). The tangible equity base (this excludes goodwill and intangibles) would be eroded by about a third. Also worrying is the working capital balance. Normally airlines operate quite happily with negative working capital as the short-term liabilities are largely composed of sold but unused air tickets; but this may become a "real" liability in the post-September 11 market.

ESTIMATED US STATE AID ($m)

United	780
America	718
Delta	652
Northwest	460
Continental	384
US Airways	316
Southwest	288
AmWest	120
Alaska	20
Total	3,738

The only carrier that looks really solid is Southwest. Its point-to-point, purely domestic operations are robust, and early indications from that carrier are that its traffic is holding up. The network Majors have adopted concerted 20% reduction in capacity programmes with commensurate job losses. They now have to address the worrying question of how to adapt their mega-hub systems and 150-seater jet fleets to the new security environment.

Swissair: an audacious rescue plan

It was debatable whether the plan devised during the summer by SAir Group's newly appointed chairman, Mario Corti, would have rescued the troubled airline group. After September 11 it became clear that the plan was unworkable. With the SAir Group running out of cash, that plan has been dispensed with, and a radical new plan devised, which is going to win few friends in any quarter of the industry.

To recap, the original Corti plan called for the sale of aircraft and other assets to raise an estimated SFr 4.5bn. This would be used to help pay off some of SAir Group's SFr 15bn of debts, which given the airline had just SFr 555m of equity, left the company skating on thin ice. Post September 11, it became clear that aircraft asset values have fallen to unknown levels (difficult to be precise when there are no buyers) and that there were no immediate realistic prospects of being able to sell subsidiaries such as Nuance (the worlds' largest airport retailer) or Swissport (its airport ground handling company).

Corti's Plan B is more radical than anyone had been expecting, particularly the banks, creditors and shareholders. They had been assuming that since Switzerland was outside the EU and therefore not subject to state aid regulations, that the Swiss government would simply bail out the airline with a rescue rights issue.

While the government has made it clear that Swissair has a vital role in the national economy, the government has not chosen the simple bail-out option. It is clear that Corti has been given the backing of the Swiss government to do whatever it takes to rescue the airline and preserve one of Switzerland's national icons, no matter who it upsets. The Swiss government announced

that it expected the Swiss banks to come up with a rescue plan, and CSFB and UBS have performed (although the coordination between Swissair and UBS was anything but precise, leading to an unnecessary fleet grounding).

The two banks have set up a fund (51% UBS, 49% CSFB) in which they have invested a total of SFr 1bn. The fund has acquired a 70% stake in Crossair and the banks are underwriting the SFr 350m rights issue for the other 30% stake in the remainder of Crossair. It is expected that the Swiss government and cantons will participate in this issue. The banks are also providing a SFr 0.5bn line of credit to the new SAir/Crossair Group. Unexpectedly, the Swiss government had also to step in following the fleet grounding with an emergency funding facility of SFr 450m).

The new plan calls for Crossair to become the core of the new Swissair Group, assuming the old SAir Group's profitable assets and the Swissair brand. The new banking consortium has been allowed to cherry-pick for the new Crossair 134 out of SAir's 162 aircraft fleet, and has chosen to slim down the network from 35 long-haul destinations to 26. The pilots, cabin crew and other staff who are to be retained are presumably going to be asked to take pay cuts to put them in line with their new Crossair colleagues.

It would appear that the rump of the business will contain little value. UBS and CSFB are providing bridging finance of SFr 250m which it is intended to allow time for assets remaining in the SAir Group to be sold. The old SAir Group has sought protection from creditors by applying to the Swiss courts for a "moratorium of debt enforcement" which covers Flightlease and SAirLines (including LTU of Germany) but does not include other assets such as the catering arm, Gate Gourmet. Whether bondholders, shareholders, creditors and lessors have any rights under Swiss law to object to the plan and its terms is unclear at present; after all this is an unprecedented situation.

What will remain in terms of a payout for creditors, bondholders and shareholders will depend on what assets can be realised and how much of the SFr 17bn of the company's debt remains in the old SAir. It is not known whether the 24 aircraft that are not wanted by Crossair have any economic value (they may be on operating leases). Also it assumed that the old SAir Group would have responsibility for paying for the redundancy costs of the 2,650 staff who are to axed.

The new plan has also had a knock-on effect elsewhere. On October 1 the SAir Group informed Sabena and the Belgian government that it would not be making its cash payment of SFr 200m to the Belgian airline. The Belgian government has provided Sabena with a bridging loan and embarked on legal action against the SAir Group. The survival of Sabena seems now to depend on what stance the EC takes on the affair. The Belgian government appears to have the will to perform a bail-out but not necessarily the means.

The SAir Group has also said it would not be making further payments to its French loss-making subsidiaries, AOM - Air Liberte, now re-branded Air Lib, (FFr 250m due in December) and to LTU (which SAir had agreed to fund until 2005). TAP is also impacted as Swissair was the guarantor for a € 40m three-year loan that the airline provided after it reneged on its previous agreement to buy a 34% stake in the Portuguese carrier. Another loser would appear to include Airbus, which had an order for A340-600s from the old SAir.

The two Swiss banks are taking somewhat of a gamble themselves. Crossair does enjoy a lower cost base than Swissair, but whether its cost base is low enough to deal with aggressive low cost competition remains to be seen. The strategy is to concentrate on the European business traveller. The grounding of its fleet and the adverse publicity that arises from creditors seizing aircraft assets has damaged the up-market Swissair brand. UBS and CSFB are unlikely to long-term investors in the new Swissair and will seek an exit if the business proves successful, either through a flotation or a trade sale. For many banks and shareholders though this rescue plan will have been a harrowing experience. And once bitten, twice shy.

European airlines: crisis positioning

Here we review the prospects for Europe's other main carriers in the wake of September 11.

British Airways

BA is the most exposed of the European flag-carriers on the North Atlantic not just in terms of traffic but more critically in terms of operating profit. Nearly all of BA's operating profit has been earned on the North Atlantic in recent years. Consequently, latest loss forecasts for the year 2001/02 are of the order of £300m-plus. Its share price fell to below Gulf War levels, then staged a partial recovery

BA has about £1bn in cash, and is looking to sell non-aviation assets, mostly property, in order to raise a further £2bn (this seems a bit optimistic). The balance sheet shows £6.4bn of net debt plus £1.6bn of off-balance sheet debt, against shareholder funds of £2.3bn.

It has imposed a freeze on capital expenditure, and grounded 20 aircraft (10 long-haul, 10 short-haul). A further 5,200 job losses have been announced, bringing the total to 7,000, equal to 12.5% of workforce.

BA's down-sizing strategy has been greatly accelerated - the airline had already reduced capacity by 8% in the first eight months of 2001 - with a further 9% cut. Transatlantic weekly frequencies from Heathrow were reduced from 270 to 240, and Gatwick-JFK was suspended. Middle East services have also been curtailed.

A 30% decrease in capacity over next three years is BA's target. The airline has now formally abandoned its attempt at running two London hubs, and has suspended eight European routes from Gatwick. Also, Heathrow-Belfast has been dropped completely, a move that BA had wanted to make for some time but which until now has been politically very difficult.

It could be argued that one of reasons for the failure of BA's strategy of downsizing, withdrawing from unprofitable European routes and concentrating efforts on long-haul, business travel was because it had been unable to make the initial large-scale cost attack and network cutback that was needed. In a way, September 11 has given BA the opportunity to fully implement that strategy.

The major problem, however, is that business traffic in its key market - the Atlantic - had dried up for the present. Somehow, BA will have to reduce its reliance on this market for its profitability.

Fortress Heathrow is not as impregnable as it once was. BA had already recognised the inevitability of a US-UK open skies regime and the emergence of new long haul competition from Delta, Continental and bmi/Lufthansa. Now it has to re-assess its alliance with American - consolidating Heathrow-New York and other US routes is an obvious solution to the collapse in transatlantic traffic, but BA now also has to consider the attitude of its passengers to flying on American.

Air France

Air France was the most phlegmatic of the Euro-Majors in its response to September 11, but the full grimness of the situation has now struck home. It has adopted a hiring freeze and has brought forward plans to retire five A310s and is grounding a B747F. Four more A310s will be retired before February 2002, four 747-200s are to be withdrawn before summer 2002 and three A321s are to be returned to lessors next year.

Air France earns about 25% of its revenues on the North Atlantic and is the second largest European cargo carrier, a business that has also collapsed. Before September 11, it had decided that it would

be adding no capacity to North Atlantic this winter. A reduction of capacity now is inevitable given that its partner Delta has cut its total capacity by 15%.

The problem for Air France's is how to keep its unit costs down when its hub operation is shrinking rather than growing. It also has to address important logistical question at CDG where connections, which weren't smooth before September 11, are being further complicated by increased security.

On the other hand, Air France will benefit from BA's partial withdrawal from the European connecting market and from the actual and future airline failures in its home market - Swissair, Sabena, AOM Air Liberte and Air Littoral. Easyjet, if it gets into Orly as it should, will take some of Air France's traffic but its main effect will be to generate new business in France.

The crisis provides an opportunity to consolidate the Air France/Alitalia alliance and shift some of Alitalia's long-hauls from Rome and Milan to CDG. A full merger, however, is still too difficult at this point.

Iberia

Iberia has a relatively small exposure to North Atlantic but a weak balance sheet.

It was the first of the European carriers to cancel ("indefinitely postpone") new aircraft - 12 A320s and three A340s due for delivery in the next 18 months. Iberia had been in a growth phase, with a 10% increase in capacity first seven months of this year.

In one regard Iberia's role in oneworld may be clarified by BA's downsizing - it should not now be competing for connecting traffic to South America, which should enable it to build up the Madrid hub. However, Iberia can expect a wave of new low-cost competition as the low-cost carriers mop up newly available equipment and target leisure markets like Spain.

Lufthansa

Lufthansa is now likely to record an operating loss in current financial year in contrast to its previous forecast of operating profit of € 700-750m. However, it is regarded as having the strongest balance sheet of the Euro-majors.

Lufthansa's immediate response has been to ground 28 of its 236-aircraft fleet. Plans to acquire 15 A380s and four B747-400s have been shelved. The carrier has suspended Frankfurt- Paris Orly, Frankfurt-Valencia, Hamburg-London Stansted, Dusseldorf-Moscow, Dortmund-Copenhagen, and Berlin-Washington It is interesting to note that all but the latter are intra-European routes.

Lufthansa will also be hit by its exposure to US domestic market through its extensive ground support operations - LSG Skychef's largest customer is American which has stopped supplying food on domestic services. In fact, its wide investment portfolio will not provide any protection - DHL International, Thomas Cook, bmi and Onex Food Services are all impacted by the events of September 11.

Like Air France, Lufthansa can draw comfort from its position in its domestic market, which has just been improved following EC approval for its investment in Eurowings. Deutsche BA is looking very vulnerable, and Lufthansa should be able to draw in extra

EUROPEAN AIRLINES - PROFIT DOWNGRADES

Pre-tax profits	Current FY Pre-Sep 11	Post- Sep 11	Next FY Pre-Sep 11	Post - Sep 11
Air France – Euro (m)	393	-33	433	2
Alitalia – LIT (bn)	-90	-701	-25	-220
British Airways - £(m)	100	-285	171	-71
EasyJet - £(m)	38	38	56	47
KLM– Euro (m)	15	-283	74	-55
Lufthansa– Euro (m)	480	-325	580	-110
Ryanair– Euro (m)	140	108	171	146
Swissair – SF (m)	-350	-725	-70	-470

Source: *JP Morgan.*

traffic from Swissair and maybe Sabena.

After a few months Lufthansa and its main Star partners, United and SIA, are going to have to rethink many aspects of the Star alliance, considering factors such as how reconcile the promise of seamless service with security issues at hub airports and passengers' concerns about carrier choice.

Alitalia

Alitalia has a weak balance sheet and a very depressed share price. It is just possible that Air France could take advantage of weakness to make a substantial equity investment. Before September 11, Alitalia expected to record operating losses of over € 200m, a figure that is now expected to at least double.

In traffic terms Alitalia has only a small North Atlantic presence but had been losing a greatly disproportionate amount of money in this market before September 11. Rationalisation of the long-hauls through permanently withdrawing some direct service and increased feeding of Air France at CDG would be logical.

As an immediate measure Alitalia is cutting 2,500 or 12% of its 21,000 staff. It has also asked for support from its government by withdrawing the 10% tax on tickets.

KLM

KLM's immediate response was to reduce transatlantic capacity by 15% and overall capacity by 5%. It has suspended Amsterdam-Atlanta and cut frequency on Amsterdam-JFK and Newark. A further cutback has brought overall capacity reduction to 15%. KLM has added a $5 surcharge on all its tickets to cover increased security and insurance costs and has announced that it will be increasing fares to the US and the Middle East by 5% from October 16.

KLM's future is of course closely tied in with that of Northwest, which has a very weak balance sheet and is one of the prime candidates for Chapter 11 bankruptcy.

The events of September 11 are likely to hasten the removal of regulatory barriers to consolidation in Europe, which basically means moving swiftly to some form of EU-US open skies. KLM then could return yet again to its search for a merger partner. The problem is that the most likely candidate, BA, is now committed to its downsizing, Fortress Heathrow strategy, and it is very difficult to see how KLM's Amsterdam hub operation could fit in with the core strategy. Still, BA might find it impossible to resist participating in, say, a rescue rights issue.

EXPOSURE OF PASSENGER SERVICES TO NORTH ATLANTIC

2000 data	North Atlantic RPKs (bn)	System-wide RPKs (bn)	North Atlantic as a % of Total
Aer Lingus	5.93	9.48	62.6
Air France	23.17	91.85	25.2
Alitalia	11.89	40.85	29.1
Austrian	2.57	8.80	29.2
BA	46.42	119.39	38.9
Finnair	0.91	3.62	25.1
Iberia	5.97	40.04	14.9
Icelandair	1.98	4.11	48.2
KLM	19.21	60.33	31.8
Lufthansa	31.21	94.29	33.1
Malev	0.59	3.56	16.6
Olympic	2.18	8.88	24.5
Sabena	6.03	19.38	31.1
SAS	4.86	22.92	21.2
Spanair	0.68	9.71	7.0
Swissair	12.06	36.21	33.3
TAP	1.11	10.41	10.7
Tarom	0.57	2.16	26.4
Turkish	2.03	17.40	11.7

Source: *AEA.*

BALANCE SHEET STRENGTH OF MAJOR QUOTED EUROPEAN AIRLINES

	AF	AZ	BA	EZ	IB	KL	LH	FR*	SK	SR
Net debt/equity(x) at end of next financial year	1.7	3.7	2.5	0.2	4.0	2.1	1.8	NM	0.9	NA
Net assets at end of next FY – Euros (bn)	4.1	1.2	5.0	0.2	1.0	2.0	4.2	0.8	2.2	0.5

Source: *ABN Amro.* **Note:** **No net debt.*

Virgin Atlantic

The large majority of Virgin Atlantic's revenues and nearly all its operating profits are generated on the North Atlantic. Heathrow-JFK is Virgin Atlantic's key route, probably generating as much profit as the rest of the network put together, pre-September 11. Virgin Atlantic reported net profits of just £27m on revenues of £1.5bn in the year to 30 April 2001. Its net asset value as at April 2001 was £137m including £554m in aircraft assets.

Virgin's immediate response to the crisis has been to ground five 747-200s, drop service to Chicago and Toronto and lay off some 1,200 employees.

However, the lease rates that Virgin is paying for its five new GECAS 747-400s are believed to be in the order of $1.3m per month whereas the 747-200s which Virgin has been forced to ground would have had a monthly rental of only $200,000 to $250,000 a month.

In addition, Virgin Atlantic is committed to eight deliveries of A340-600s over the next 20 months. These will have to be postponed. And Airbus must be wondering about the solidity of Virgin's A380 order (the only European carrier apart from Air France to have committed to this type).

The escape route for Sir Richard Branson must involve SIA, 49% owner of Virgin Atlantic. However, SIA cannot directly buy out the remaining 51% , and would have to find a UK company to act as an intermediary.

In the short term, SIA may be more interested in Virgin Blue, which now has the opportunity to expand as the number two Australian domestic carrier after Qantas in the wake of the bankruptcy of Ansett.

Olympic

Olympic is used to being in a perpetual state of financial crisis and so in an odd way was quite well positioned to face the aftermath of September 11. Frequencies to the US and Australia have been reduced but no redundancies have been made.

The Greek government now has two routes it can follow. One, it can give in to the populist voices that will be raised at the October 15 PASOK conference, return to being an unreconstructed state-owned and funded flag-carrier, defy the EC rules on state aid and try to bluff out the consequences.

Two, it can continue with the proposed sale of 70% or so of a new carrier to Axon (theoretical deadline is October 18). This is not dissimilar to the Swissair/Crossair scenario, though Olympic hasn't the same indebtedness as Swissair and Axon Airlines isn't in the same league as Crossair. One major problem - how to replace the 14 Chapter 2 737-200s next year - will be greatly alleviated by the availability of cheap narrowbodies on the market.

Aer Lingus

Aer Lingus is heavily exposed to the North Atlantic market, which contributed 60% of operating profits in the last financial year. A downturn in the cargo market would come as almost an equally strong blow as the loss of passenger revenues. Aer Lingus's forecast losses for the year are now over € 100m.

Top management was in confusion prior to September 11, following the accidental death of chairman Bernie Cahill and the resignation of John O'Donovan, the acting CEO. Tom Mulcahy, a banker, is the new

CEO.

Seven of its fleet of 38 aircraft are grounded and it has suspended service services from Dublin to Newark and Baltimore and Washington plus Dublin- Stockholm.

Privatisation had already been shelved, and now a 25% cost reduction programme is required for survival, which will be hard to achieve against generous wage settlements made to staff earlier this year. Its rival Ryanair grows inexorably and this crisis may finally allow it to come to an agreement with Aer Rianta to develop a new terminal and Dublin airport and resume expansion from there (Ryanair has more or less frozen services from Dublin in recent years because of its dispute with Aer Rianta and concentrated on growing from London Stansted).

SAS

SAS's management was in crisis prior to September 11, with the entire board resigning over the cartel-building scandal with Maersk Air. SAS had embarked on an aggressive growth strategy, particularly long-haul, to re-capture market share lost in the 1990s.

Now, 2002 will see a 12% decline in the original planned capacity for 2002. There will be a 22% fall in intercontinental capacity in contrast to a planned increase of 20%, and a 10% drop in European capacity versus a planned increase of 10%. SAS is closing these routes: Copenhagen to Kalingrad, Tel Aviv, Barcelona, Delhi and London Stansted; Oslo-Newark; Gothenburg-Paris; and Stockholm-Hamburg. Some 16 aircraft are to be grounded, three widebodies, 10 narrowbodies and three commuter types. The company will make between 800 and 1,100 employees redundant.

Ryanair and easyJet

Following an immediate fall off in bookings , the low-cost carriers report that traffic is now returning to normal levels, boosted helped by aggressive fare sales. The forceful message from Ryanair in particular is that airlines should stimulate demand rather than turning to governments for bail-outs - propaganda but effective. Ryanair has also explicitly stated it expects to meet its profit targets for the year ending March 31 2002 and that its bookings remained "largely unaffected by the recent events in the US".

While the low-cost carriers may be overblowing their case, it is clear that their model of airline operation is the best adapted for survival in the current crisis. Indeed, the balance of power between the low-cost carriers and the network airlines has shifted significantly further in their favour in both the US and Europe.

Some specific positive factors can be identified:

- Being purely intra-European they have escaped the collapse of the transatlantic market (bmi, by contrast, having started its A330 services to the US, has been severely impacted and forced to implement aircraft grounding and a staff cutting exercise).
- With pure point-to-point operations, they do not have to face the logistical complications associated with increased security at connecting hubs.
- Their clients are used to longer check-in times (many Ryanair passengers are bussed to secondary airports 1.5 hours before departure).
- There should be minimal impact on aircraft turn-around times (the extra security time is essentially within the terminals).
- Their brands are neutral in terms of national affiliation and so may be regarded as safer than those of certain flag-carriers.
- In recessionary times more and more business travellers will opt for low-cost travel.
- Important market growth opportunities have appeared - at Paris Orly, Geneva and Gatwick for easyJet, at Dublin, Gatwick and Brussels for Ryanair.
- More secondary airports will be persuaded to sign up with Ryanair.
- The imminent surplus of pilots and mechanics alleviates one significant source of cost pressure.
- Aircraft values and lease rates are plummeting, so fleet expansion will be greatly facilitated (Airbus must be wishing that it has persuaded either of them to build an A320 fleet).

CRISIS CONSULTANCY AND ADVICE

The principals and associates of Aviation Economics have gone through previous crises in the commercial aviation sector. As a result we have experience in, for example, rescue and turn-around plans, emergency scenario forecasting, work-outs, rescue rights issues and state aid cases.

Contact: Tim Coombs or Keith McMullan
+44 (0)20 7490 5215
info@aviationeconomics.com

AVIATION STRATEGY ONLINE

Subscribers can access *Aviation Strategy* (including all back numbers) through our website www.aviationeconomics.com. However, you need a personal password - to obtain it email *info@aviationeconomics.com*

AIRCRAFT AND ASSET VALUATIONS

Contact Paul Leighton at AVAC (Aircraft Value Analysis Company)

• Website: www.aircraftvalues.net
• Email: pleighton@aircraftvalues.net
• Tel: +44 (0) 20 7477 6563
• Fax: +44 (0) 20 7477 6564

The management of tragedy

Tragedy is never far from airline management. In the UK some airline staff will still have potent memories of Zulu Echo in flames at Heathrow, of Papa India plunging into the ground near Staines, of colleagues lost in the Turkish Airlines DC-10 returning from Paris, or of Whisky Tango being lost in mid-air over Yugoslavia. A previous generation will never forget the dreadful sequence of Comet crashes. Newer colleagues will be haunted by pictures of Swissair flotsam in the Atlantic off Nova Scotia, the smoking hole that was Lockerbie, and of a French Concorde trying to fly while in flames.

Adding further depth to such tragedies are the messages left by passengers on the Japanese 747 as it circled helplessly in cloudy skies, or on a smaller scale of the frosted windows of Payne Stewart's private jet flying eerily within sight but beyond help.

New York and Washington have produced images that quite over-shadow these. The sight of passenger aircraft deliberately flying into buildings packed with other innocent people challenges most people's sense of reality, and is now producing pictures more resonant of Hiroshima or Dresden than of any previous aircraft accident.

Beyond the mourning for those lost and injured in these terrible events, and beyond the pursuit and exacting of retribution on the perpetrators, a series of challenges are emerging for airline managers. It is already clear that civil aviation will never be the same again.

Those who remember Dawson's field will also remember that the main loss that day was of three fine aircraft, not of thousands of lives. Nonetheless the aftermath of that terrorist action was the imposition of security measures regarding passenger searches and security guards at airports. Airlines then struggled with the implementation of these in airport buildings ill-designed for such purposes.

The tragedy at Frankfurt airport ten years later and the loss of the Pan American and TWA Boeing 747's to bombs whilst in the air led to further more rigorous protective procedures. The screening of all baggage, the reconciliation of all baggage to passengers, and the adoption of still further measures on known high-risk routes, produced further burdens on airlines. All willingly accepted as staff in even the most commercial airline will not knowingly jeopardise safety.

Facing the threat of martyrdom

Now, however, the threat has increased manifold. Terrorists are now willing to embrace martyrdom, indeed they actively seek it. They are now willing not just to seize publicity by violence, but seek to use extreme violence to inflict real damage on nations and the lives of their citizens. They do not regard civilian aircraft as targets, they regard them as potential weapons of mass destruction.

Facing such evil forces airline managers now face a long and hard struggle to maintain part of the essential infrastructure of a democratic world both technically and economically. They also carry the burden of needing to show that terrorism does not win, whilst knowing that aviation - like most forms of travel - has never ever been absolutely safe.

There will be immediate new security procedures such as the abolition of flights to some destinations, increased passenger checks, and perhaps some form of flying security guards, but what is likely beyond these?

Six Items to rethink

We would suggest that this initial list of six factors posits not just a rethink on security, but also a rethink of some of the basic values and purposes of airlines, their

By Roger Niven,
Director,
Smith & Williamson

Email: *rjn@smith.williamson.co.uk*

Tele: +44 (0) 20 7612 8710

alliances, their relationships with airports, and their relationships with their staff. The factors we have selected are:

• Recognition that even the smallest domestic sector is as vulnerable as an international flight and that any flight may now be a target as opposed to merely potentially feeding a terrorist onto an international flight. This may lead to a reappraisal of the rigour of security measures at quite small airports, and decisions not to depend upon local or franchise ground service providers.

• Recognition that no airframe may be made secure against a determined assailant already on board. Civilian pilots may now have to face the real possibility that they should allow cabin crew or passengers to be killed behind them, to deliberately crash their aircraft to save further loss of life, or to accept that they may be shot down by defence forces. This extends the ethical counselling of pilots beyond the traditional understanding that when all else fails attempts are made to minimise damage on the ground. This has wide implications on pilot selection, training and management.

• Reappraisal of the continued marketing and growth in transfer passengers, especially through hub-airports, amid the need to more directly control and monitor individuals throughout their journeys. This may lead to procedures that reduce the maximum flight banks in a day, or a decision to restrict transfer capacity for security and process control rather than commercial reasons. This in turn may then lead to a fundamental review of network management strategies, and therefore fleet mix.

• Reappraisal of the design of airports where current thinking is for ease of movement of connecting passengers and ability to shop, meet and mingle. New thinking might suggest the segmentation of routes or groups of routes, or a requirement that arriving passengers either pass through additional security procedures, or have to make the additional transition from airside to landside to airside. This may then lead to voluntary or forced separation of some city-pairs to perhaps purpose built neighbouring airports.

• Re-education of passengers that after a decade in which ever reduced check-in and transit procedures were the goal, now airports are likely to demand lengthy reporting times irrespective of frequent flyer status. Thus for larger aircraft the time required for increased security checks, and for smaller aircraft a reduced availability of gates - since each will be occupied longer - may increase passenger time required at an airport, and reduce the number of flights available. In such a context airlines may reappraise the nature of their premium flights and reschedule large sections of their services.

• Re-education of passengers that after a decade in which lower fares became generally available the price of a safer airline environment is increased fares and reduced capacity. Reduced capacity will result from more congested airports as additional security measures are introduced and from airlines having to lengthen ramp transit times - especially for smaller aircraft.

Increased fares will result from the need to cover all the increased costs implicit in the above, the need to spread these across a reduced capacity, and in a short-term context of probably a reduced propensity by the public to fly. This may result in the low cost carriers making further market gains, but even they may raise fares, albeit to lower levels than the flag carriers.

Safety is sacrosanct

It is difficult to see the benefits for civil aviation from this American tragedy, and would indeed be disrespectful to those who died to propose that any might result. The changes envisaged above are proposed from quite a different perspective. Namely that civil aviation has long depended upon a core value in all employees that safety is sacrosanct.

The tragic scenes in the US in September will remind everyone of this inalienable belief, and almost certainly prompt a reaction that might discomfort the travelling public for a time, but will nonetheless be fuelled by a determination that a safe civil air service infrastructure will be maintained.

Airport security - who is that passenger?

There now must be an irrevocable step change in the required level of security to make air travel acceptably safe to the travelling public. One major element to surface is that it will no longer be sufficient to assume that dangerous malcontents can be stopped at the airport through the assiduous use of metal detectors. Nor is it sufficient merely to search passengers' bags for items that may be used in an aggressive way on board - even if we can develop the machinery to identify non-metallic objects such as those used on September 11. It becomes paramount that we can identify each passenger before he gets into the airport as not only who we expect him to be, but also who he or she says they are.

Not unexpectedly, the immediate reaction from the authorities from the events of the disaster has been significantly to heighten security checks. In the US, airport security has been somewhat more relaxed than in Europe and elsewhere. Now it is much different. The received advice is now for passengers to allow for two hours check before departure on a domestic flight and three hours before departing on an international flight. The emphasis in the short run is on checking as many bags and travellers as possible, to deny the ability for passengers to take bags on-board and to question all travellers for their reason to travel.

There have been reports of isolated incidents of panicky action on the part of the air crew. One flight crew refused to take off with passengers of Middle Eastern appearance on board, although they were respectable businessmen who had cleared all security checks. In the current very tense atmosphere a tragic accident caused by panic or misinterpretation is unfortunately quite possible.

The implications of the changed security are enormous.

Airline recruitment and employment: there will be an increased need for the positive vetting and psychometric testing of all pilots, flight crew and cabin crew. Crew must now be trained to overcome hijackers rather than trying to appease them - something that runs contrary to the whole ethos of the profession. Also, the last thing any airline will want is to employ a professional with suicidal tendencies - it has happened more than once.

Aircraft interior design: the events of September 11 show that the current system is not safe - indeed, on some intra-European flights the cockpit door is routinely left open throughout the flight.

There have been calls for all flight decks to be securely isolated from the cabin during flight. This will mean heavier doors and securer locks. It will also mean providing the flight crew with catering and other facilities completely separated from the main cabins. On long-haul flights pilots would thereby have to have secure and separate rest and recreation areas. All this will add weight and expense.

Cabin security: the US government has announced that there will be armed air marshalls on every flight. Direct costs of these guards will be paid by the government. Airlines will have to lose some revenue seats but that scarcely appears to be a problem at the moment. It also brings up the question of trust and positive vetting similar to that suggested above for flight crew.

Airline check-in procedures: one thing is sure - there will be unbearable check-in procedures. El Al had to impose some of the most uncomfortable check in procedures following the hi-jacks of the 70s. Since then, that airline has been one of the safest carriers, but equally one of the most objectionable on which to fly for the quality of customer experience (until you get on board). As part of the new security measures it is likely that all carriers will have to provide the El Al-type security procedures and passenger vetting. The reason for the highly personal questions that El Al security officers ask is to attempt to gain an idea of the bona fides of the traveller. This is now imperative

for every other airline worldwide.

As a result the check-in process for everyone is going to elongate. This will mean wither very much longer queues or a substantial increase in the number of check in desks, check in staff and security personnel. Or both. For the passenger of course it will mean the need to allow a very much greater amount of time for the check-in process. For those carriers who operate efficient transfer hubs, it will result in the requirement for greater minimum transfer times between connecting flights - reducing the attractiveness of the hub - and indeed of the whole of an airline's operations.

For all airports worldwide implications are also severe.

Check-in times are likely to increase by 50%-100%. As a result, with so many passengers arriving so much more in advance of travel, both the landside space required for passenger check-in and the airside space required will more than double (with the necessity to provide adequate capacity for peak periods). Terminal throughput will fall as will the design capacity. For example, a terminal that may have adequately coped with 20m pax per year may now have a safe design capacity of only 12-15m pax. There are already many airports worldwide with capacity restraints on runway usage. This argument implies that many will exceed terminal design capacity.

For many US airports, where in the past the security has been laxer than elsewhere, much stricter controls to airside access will have to be imposed: and in many cases this will require some further terminal design to provide for segregation of checked and non-checked travellers. This will be particularly so at hub airports, with requirements for much better transfer passenger segregation and security checking.

Bag check routines will inevitably become far more onerous. One of the main difficulties will be in designing a process to pick up non-metallic dangerous items.

Increasingly it is likely that a certification of airport security measures becomes necessary: and in many airports, airlines are likely to insist on self handling and security checks.

A new solution

Is there really a solution to the dilemma? What is apparent is that the industry now has really to know its customer. Photo IDs, passports and driving licences can easily be forged - and without a lot of manpower difficult to validate at airport check-in.

For most of the major airlines their frequent flyers account for the greater majority of trips taken and by far the majority of revenue generated - adhering to the 80/20 rule that 20% of the passengers provide 80% of the revenue. These are the last people that the airlines want to restrict: and there will be increasing pressure for positive vetting of the frequent flyer to allow fast track access. Even so the airline and airport would need to know that the passenger who turns up at the airport is who they actually thought he or she was.

Technology moves on apace and there is the opportunity for airlines to use secure smart card technology to maximise security and minimise costs. These cards could be programmed to contain biometric data (such as retina patterns, finger prints) that can be validated at any point in the travel process to guarantee that the card carrier is the one to whom it was issued. They could also be programmed to include the bearer's photograph, social security numbers, next of kin, current travel ticket details, and current position in the check in process. The cards would use public/private key trusted third party encryption methodology of the highest standards to secure and protect the data.

The passenger would have to be positively vetted prior to enabling the use of the card. This initially would involve a costly face-to-face process: but need only be done infrequently for the frequent traveller.

As a result of this pre-vetting of frequent passengers the security measures could legitimately concentrate on the risks - the passengers you know nothing about.

This is not a new idea: the STP (simplifying travel programme - see www.simplifying-travel.org) has been proposing something similar to ease the travel process through borders. The US has also had a small-scale programme in place for some time (INSPass).

By James Halstead

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 %
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
1999	200.0	124.9	62.5	218.9	166.5	76.1	134.5	103.1	76.7	492.3	371.0	75.4	727.2	519.5	71.4
2000	208.2	132.8	63.8	229.9	179.4	78.1	137.8	108.0	78.3	508.9	396.5	77.9	755.0	555.2	73.5
Aug 01	20.0	13.9	69.8	21.4	17.3	80.9	11.3	9.4	82.8	45.1	36.8	81.5	68.7	53.5	77.9
Ann. chng	4.2%	3.9%	-0.2	1.0%	-3.7%	-4.0	-4.5%	-3.9%	0.6	-0.1%	-2.7%	-2.2	1.3%	-0.8%	-1.6
Jan-Aug 01	146.4	93.8	64.0	156.0	119.4	76.6	89.6	70.4	78.5	340.8	264.3	77.5	514.1	376.1	73.1
Ann. chng	4.6%	4.7%	0.0	1.4%	-2.0%	-2.7	-3.0%	-2.6%	0.3	0.2%	-0.8%	-0.8	1.6%	0.5%	-0.8

Source: AEA.

US MAJORS' SCHEDULED TRAFFIC

	Domestic			North Atlantic			Pacific			Latin America			Total international		
	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %	ASK bn	RPK bn	LF %
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	960.8	678.8	70.7	150.5	117.8	78.3	112.7	82.5	73.2	83.5	52.4	62.8	346.7	252.7	72.9
1999	1,007.3	707.5	70.2	164.2	128.2	78.1	113.2	84.7	74.8	81.3	54.3	66.8	358.7	267.2	74.5
2000	1,033.5	740.1	71.6										380.9	289.9	76.1
Aug 01	96.3	73.4	76.2										35.4	28.8	81.4
Ann. chng	3.1%	3.2%	0.0										1.2%	1.2%	0.0
Jan-Aug 01	726.9	520.5	71.6										267.3	203.2	76.0
Ann. chng	2.1%	0.0%	-1.5										4.1%	2.5%	-1.2

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

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 %
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	1,911	1,297	67.9	2,600	1,858	71.5	4,512	3,157	70.0	5.4	5.0	5.7	7.4	5.6	6.4
2000	2,005	1,392	69.4	2,745	1,969	71.8	4,750	3,361	70.8	4.9	7.2	5.6	6.0	5.3	6.5
***2001**	2,079	1,414	68.0	2,879	2,028	70.4	4,958	3,442	69.4	3.7	1.7	4.9	2.9	4.4	2.4
***2002**	2,146	1,463	68.2	3,007	2,122	70.6	5,154	3,587	69.6	3.2	3.5	4.5	4.7	4.0	4.2
***2003**	2,237	1,533	68.7	3,176	2,258	71.1	5,413	3,794	70.1	4.2	4.9	5.6	6.3	5.0	5.8
***2004**	2,344	1,607	68.7	3,373	2,398	71.1	5,717	4,007	70.1	3.7	4.8	6.2	6.2	5.6	5.6

Note: * = Forecast; ICAO traffic includes charters. **Source:** Airline Monitor, January 2001.

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
1993	105	100	100	101	105	117	107	106	109	112	117	104	108	101	96
1994	109	103	103	104	106	126	117	115	115	117	131	110	117	107	104
1995	111	106	105	106	107	137	126	122	123	123	141	115	124	113	119
1996	114	108	107	107	111	152	135	128	128	126	155	124	127	116	132
1997	118	112	110	109	112	172	146	142	142	138	177	135	136	123	132
1998	122	115	113	112	109	173	150	152	150	135	196	144	147	133	121
1999	127	117	114	115	111	179	150	155	153	135	220	151	152	136	122
2000	134	121	117	119	114	198	162	174	172	153	250	164	166	153	139
***2001**	138	124	121	122	116	216	173	191	188	162	272	176	179	165	148

Note: * = Forecast; Real = inflation adjusted. **Source:** OECD Economic Outlook, December 2000.

FINANCIAL TRENDS (1990=100)

	Inflation (1990=100)						Exchange rates (against US$)						LIBOR
	US	UK	Germany	France	Japan		UK	Germ.	France	Switz.	Euro**	Japan	6 month Euro-$
1993	111	109	114	108	106	**1992**	0.570	1.562	5.294	1.406	0.773	126.7	3.84%
1994	113	109	117	110	107	**1993**	0.666	1.653	5.662	1.477	0.854	111.2	3.36%
1995	117	112	119	112	107	**1994**	0.653	1.623	5.552	1.367	0.843	102.2	5.06%
1996	120	114	121	113	107	**1995**	0.634	1.433	4.991	1.182	0.765	94.1	6.12%
1997	122	117	123	114	108	**1996**	0.641	1.505	5.116	1.236	0.788	108.8	4.48%
1998	123	120	124	115	109	**1997**	0.611	1.734	5.836	1.451	0.884	121.1	5.85%
1999	125	122	126	116	108	**1998**	0.603	1.759	5.898	1.450	0.896	130.8	5.51%***
2000	128	124	127	117	107	**1999**	0.621	1.938	6.498	1.587	1.010	103.3	5.92%***
***2001**	131	127	128	119	107	**2000**	0.603	2.119	7.108	1.658	0.923	118.1	5.36%***
						Sep 2001	0.678	2.123	7.121	1.604	0.921	117.9	3.56%***

Note: * = Forecast. **Source:** OECD Economic Outlook, December 2000. **Euro rate quoted from January 1999 onwards. 1990-1998 historical rates quote ECU. *** = $ LIBOR BBA London interbank fixing six month rate.

AIRCRAFT AVAILABLE FOR SALE OR LEASE

	Old narrowbodies	Old widebodies	Total old	New narrowbodies	New widebodies	Total new	TOTAL
1988	126	34	160	16	1	17	177
1989	216	38	254	42	2	44	298
1990	380	77	457	74	14	88	545
1991	457	129	586	114	27	141	727
1992	433	138	571	75	15	90	661
1993	370	195	565	103	37	140	705
1994	267	182	449	61	23	84	533
1995	238	157	395	49	29	78	473
1996	124	101	225	32	22	54	279
1997	162	104	266	54	13	67	333
1998	187	125	312	67	55	122	434
1999	243	134	377	101	53	154	531
2000	302	172	474	160	42	202	676
2001-Jan	288	150	438	172	43	215	651
2001-Feb	298	155	453	152	46	198	651
2001-Mar	345	144	489	164	47	211	700
2001-Apr	326	130	456	184	61	245	701
2001-May	371	140	511	210	61	271	782
2001-June	353	150	513	222	67	289	802

Source: *BACK* **Notes:** *As at end year; Old narrowbodies = 707, DC8, DC9, 727,737-100/200, F28, BAC 1-11, Caravelle; Old widebodies = L1011, DC10, 747-100/200, A300B4; New narrowbodies = 737-300+, 757. A320 types, BAe 146, F100, RJ; New widebodies = 747-300+, 767, 777. A600, A310, A330, A340.*

JET AND TURBOPROP ORDERS

	Date	Buyer	Order	Price	Delivery	Other information/engines
Airbus	-					
ATR	-					
BAe	Sep 18	Bahrain Def. Force	1 RJ85	$25m	4Q2001	
Boeing	-					
Bombardier	Sep 26	REGA	3 Challenger 604s		2Q2002+	
Embraer	-					
Fairchild	-					

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 99	4,477	4,206	271	280	65,751.2	44,328.2	67.4	6.81	6.41					98,700
Jan-Mar 00	4,577	4,365	212	132	64,392.8	43,478.4	67.5	7.11	6.78					104,500
Apr-Jun 00	5,011	4,494	517	321	67,000.4	50,538.7	75.4	7.48	6.71					105,900
Jul-Sep 00	5,256	4,684	572	313	66,654.0	50,828.1	76.3	7.89	7.03					107,500
Oct-Dec 00	4,859	4,779	80	47	63,562.5	44,318.5	69.7	7.64	7.52					107,500
Jan-Mar 01	4,760	4,743	17	-43	62,725.7	42,590.7	67.9	7.59	7.56					108,900
Apr-Jun 01	4,838	5,586	-748	-494	66,007.0	47,484.0	71.9	7.33	8.46					128,300
America West														
Oct-Dec 99	569	532	37	29	10,594.0	7,307.8	69.0	5.37	5.02	4,822				11,575
Jan-Mar 00	563	552	11	15	10,440.8	6,960.5	66.7	5.39	5.29	4,612				12,024
Apr-Jun 00	618	570	48	33	10,979.8	8,091.7	73.7	5.63	5.19	5,206				12,158
Jul-Sep 00	591	591	0	1	11,079.9	8,088.3	73.0	5.33	5.33	5,178				
Oct-Dec 00	573	654	-81	-47	11,133.1	7,616.8	68.4	5.15	5.87	4,958				
Jan-Mar 01	587	612	-25	-13	11,355.2	7,857.8	69.2	5.17	5.39	5,104				
Apr-Jun 01	587	641	-54	-42	11,097.7	8,367.4	75.5	5.29	5.78	5,294				
Continental														
Oct-Dec 99	2,158	2,073	85	33	33,771.2	24,094.4	71.3	6.39	6.14	11,347				
Jan-Mar 00	2,277	2,223	54	14	33,710.2	24,143.0	71.6	6.75	6.59	11,201				
Apr-Jun 00	2,571	2,292	279	149	34,406.9	26,534.0	77.1	7.47	6.66	12,084				
Jul-Sep 00	2,622	2,368	254	135	35,978.0	27881.1	77.5	7.29	6.58	12,155				
Oct-Dec 00	2,429	2,332	97	44	34,454.0	24,685.1	71.6	7.05	6.77	11,456				
Jan-Mar 01	2,451	2,375	76	9	34,533.9	24,322.9	70.4	7.10	6.88	11,220				
Apr-Jun 01	2,556	2,419	137	42	36,712.9	27,443.4	74.8	6.96	6.59	12,256				
Delta														
Oct-Dec 99	3,713	3,705	8	352	58,265.1	40,495.3	69.5	6.37	6.36	25,739				
Jan-Mar 00	3,960	3,605	355	223	57,093.8	39,404.4	69.0	6.94	6.31	25,093				72,300
Apr-Jun 00	4,439	3,863	606	460	59,753.4	46,509.8	77.8	7.48	6.46	28,333				73,800
Jul-Sep 00	4,325	3,827	498	127	61,319.9	47,076.5	76.8	7.05	6.24	27,378				
Oct-Dec 00	4,017	3,839	178	18	58,655.8	40,527.0	69.1	6.85	6.54	24,919				
Jan-Mar 01	3,842	3,957	-115	-133	60,714.1	40,690.6	67.0	6.33	6.52	26,932				
Apr-Jun 01	3,776	3,890	-114	-90	61,538.0	44,783.6	72.8	6.14	6.32	28,130				82,500
Northwest														
Oct-Dec 99	2,555	2,461	94	29	39,228.3	28,618.2	73.0	6.51	6.27					
Jan-Mar 00	2,570	2,573	-3	3	39,486.0	28,627.4	72.5	6.51	6.52					
Apr-Jun 00	2,927	2,675	252	115	42,049.6	33,523.5	79.7	6.96	6.36					
Jul-Sep 00	3,178	2,824	354	207	44,379.9	35,353.1	79.7	7.16	6.36					
Oct-Dec 00	2,740	2,774	-34	-69	40,417.6	29,850.1	73.9	6.78	6.86					
Jan-Mar 01	2,611	2,847	-236	-171	40,211.6	29,394.7	73.1	6.49	7.08					
Apr-Jun 01	2,715	2,751	-36	-55	42,216.8	32,886.9	77.9	6.43	6.52					
Southwest														
Oct-Dec 99	1,204	1,050	154	94	22,360.7	15,047.8	67.3	5.38	4.70	14,818				27,653
Jan-Mar 00	1,243	1,057	155	74	22,773.8	15,210.2	66.8	5.46	4.77	14,389				27,911
Apr-Jun 00	1,461	1,146	315	191	23,724.3	17,624.9	74.3	6.16	4.83	16,501				
Jul-Sep 00	1,479	1,179	300	184	24,638.0	17,650.8	71.6	6.00	4.79	16,501				
Oct-Dec 00	1,467	1,216	251	155	25,267.5	17,443.2	69.0	5.81	4.81	16,287				
Jan-Mar 01	1,429	1,218	210	121	25,512.2	17,169.7	67.3	5.60	4.77	15,716				29,563
Apr-Jun 01	1,554	1,263	291	176	26,430.0	18,970.4				17,527				30,369
TWA														
Oct-Dec 99	809	913	-104	-76	14,501.6	9,687.1	66.8	5.58	6.30	6,038				
Jan-Mar 00	954	939	15	-4	15,465.4	11,607.0	75.1	6.17	6.07	7,020				
Apr-Jun 00	973	984	-11	-35	15,928.0	12,316.3	77.3	6.00	4.79	7,211				
Jul-Sep 00														
Oct-Dec 00														
Jan-Mar 01														
Apr-Jun 01														
United														
Oct-Dec 99	4,480	4,286	194	129	70,715.9	49,172.2	69.5	6.34	6.06	21,536				96,600
Jan-Mar 00	4,546	4,294	252	-99	68,421.1	46,683.5	68.2	6.64	6.28	20,141				96,100
Apr-Jun 00	5,109	4,504	605	408	70,913.5	53,624.8	75.6	7.20	6.35	22,412				98,300
Jul-Sep 00	4,905	4,946	-41	-116	72,495.7	54,049.9	74.6	6.77	6.82	21,458				99,700
Oct-Dec 00	4,792	4,955	-163	-71	70,550.1	49,897.9	70.7	6.79	7.02	20,509				99,100
Jan-Mar 01	4,424	4,815	-391	-313	67,741.4	46,267.7	68.3	6.53	7.11	18,860				98,600
Apr-Jun 01	4,658	5,011	-353	-292	71,928.2	52,651.5	73.2	6.48	6.97	21,331				98,000
US Airways														
Oct-Dec 99	2,135	2,256	-121	-81	24,705.9	16,714.2	67.6	8.64	9.13	14,075				41,636
Jan-Mar 00	2,098	2,237	-139	-218	24,250.3	15,568.7	64.2	8.65	9.22	12,804				42,727
Apr-Jun 00	2,433	2,265	168	80	26,171.9	19,557.4	74.7	9.30	8.65	15,554				42,653
Jul-Sep 00	2,381	2,376	5	-30	28,452.4	20,726.2	72.8	8.37	8.35	15,809				44,026
Oct-Dec 00	2,347	2,428	-81	-98	28,275.4	19,590.0	69.3	8.30	8.59	15,605				43,467
Jan-Mar 01	2,241	2,469	-228	-171	27,752.4	18,372.1	66.2	8.07	8.90	14,193				44,077
Apr-Jun 01	2,493	2,473	20	-24	29,394.8	21,693.4	73.8	8.48	8.41	16,582				44,673
ANA														
Oct-Dec 99	SIX MONTH FIGURES													
Jan-Mar 00	5,591	5,842	-251	6	49,646.9	31,844.9	64.1	11.26	11.77	27,430				
Apr-Jun 00	SIX MONTH FIGURES													
Jul-Sep 00	5,288	4,793	495	359	47,586.3	31,753.1	66.7	11.11	10.07	24,958				
Oct-Dec 00	SIX MONTH FIGURES													
Jan-Mar 01	5,376	5,186	190	-486	46,278.4	29,168.4	63.0	11.61	11.21	24,471				
Apr-Jun 01														
Cathay Pacific														
Oct-Dec 99	1,989	1,658	331	133	29,313.0	22,167.9	75.6	6.79	5.66		5,600.0			
Jan-Mar 00	SIX MONTH FIGURES													
Apr-Jun 00	2,070	1,765	305	285	29,839.0	22,588.1	75.7	6.94	5.92		5,483.0			
Jul-Sep 00	SIX MONTH FIGURES													
Oct-Dec 00	2,356	1,983	373	382	32,070.0	24,586.6	76.7	7.35	6.13		6,147.0			
Jan-Mar 01														
Apr-Jun 01														
JAL														
Oct-Dec 99	TWELVE MONTH FIGURES													
Jan-Mar 00	14,665	14,254	411	181	126,282.4	88,478.5	70.1	11.61	11.29	37,247	18,856.7	12,738.0	67.6	
Apr-Jun 00														
Jul-Sep 00														
Oct-Dec 00	TWELVE MONTH FIGURES													
Jan-Mar 01	14,198	13,542	656	342										
Apr-Jun 01														

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 99	4,340	4,177	163	232	49,516.0	36,693.0	74.0	8.76	8.44	20,564	7,827	5,995	78.2	
Jan-Mar 00														
Apr-Jun 00														
Jul-Sep 00														
Oct-Dec 00														
Jan-Mar 01														
Apr-Jun 01														
Malaysian														
Oct-Dec 99	TWELVE MONTH FIGURES													
Jan-Mar 00	2,148	1,652	496	-67	48,906.0	34,930.0	71.4	4.39	3.38		7,531.5	4,853.4	64.4	
Apr-Jun 00														
Jul-Sep 00														
Oct-Dec 00	TWELVE MONTH FIGURES													
Jan-Mar 01	2,357	2,178	179	-351	52,329.0	39,142.4	74.8	4.50	4.16		8,055.0	5,379.0	66.8	
Apr-Jun 01														
Singapore														
Oct-Dec 99	SIX MONTH FIGURES													
Jan-Mar 00	2,459	2,203	256	439	44,582.6	33,430.1	75.0	5.51	4.94	7,030	8,665.8	6,185.7	71.4	
Apr-Jun 00	SIX MONTH FIGURES													
Jul-Sep 00	2,864	2,438	426	668	46,477.5	36,136.6	77.8	61.6	5.25	7,584	8,950.0	6,524.6	72.9	
Oct-Dec 00	SIX MONTH FIGURES													
Jan-Mar 01	2,635	2,317	318	209	46,170.5	34,981.8	75.8	5.71	5.02	7,416	9,084.0	6,460.4	71.1	
Apr-Jun 01														
Thai Airways														
Oct-Dec 99														
Jan-Mar 00														
Apr-Jun 00	TWELVE MONTH FIGURES													
Jul-Sep 00				108	55,517.0	41,347.0	74.5			17,700	7,752.0	5,469.0	70.6	
Oct-Dec 00														
Jan-Mar 01														
Apr-Jun 01														
Air France														
Oct-Dec 99	SIX MONTH FIGURES													
Jan-Mar 00	4,831	4,430	401	41	55,508.0	41,650.0	75.0	8.70	7.98	19,200				
Apr-Jun 00	SIX MONTH FIGURES													
Jul-Sep 00	5,506	5,132	374	385	60,088.0	48,464.0	80.7	9.16	8.54					
Oct-Dec 00	SIX MONTH FIGURES													
Jan-Mar 01	4,981	4,988	-7	-25	59,100.5	44,622.2	75.5	8.42	8.43					
Apr-Jun 01														
Alitalia														
Oct-Dec 99														
Jan-Mar 00	SIX MONTH FIGURES													
Apr-Jun 00	2,225	2,254	-29	-15	24,747.8	16,898.8	68.3	8.99	9.11	11,693	3,464.8	2,404.5	69.4	
Jul-Sep 00	SIX MONTH FIGURES													
Oct-Dec 00	2,553	2,753	-200	-209	32,735.2	24,534.2	74.9	7.80	8.41					
Jan-Mar 01														
Apr-Jun 01														
BA														
Oct-Dec 99	3,473	3,476	-3	-112	45,347.0	30,192.0	66.6	7.66	7.67	11,084	6,469.0	4,270.0	66.1	65.800
Jan-Mar 00	3,097	3,281	-184	-247	44,533.0	29,328.0	65.9	6.95	7.37	10,778	6,253.0	4,041.0	64.6	64,874
Apr-Jun 00	3,488	3,342	146	-85	44,826.0	32,295.0	72.0	7.78	7.46	11,633	6,475.0	4,407.0	68.1	61,411
Jul-Sep 00	3,673	3,293	380	197	45,333.0	35,093.0	77.4	8.10	7.26	12,615	6,608.0	4,741.0	71.7	62,793
Oct-Dec 00	3,328	3,212	116	84	42,347.0	29,008.0	68.5	7.86	7.58	10,493	6,230.0	4,128.0	66.3	62,831
Jan-Mar 01	3,048	3,136	-88	-111	40,018.0	26,800.0	67.0	7.62	7.84	9,721	5,883.0	3,711.0	63.1	62,425
Apr-Jun 01	3,277	3,206	71	37	40,980.0	28,646.0	69.9	8.00	7.82	11,293	6,124.0	3,915.0	63.9	58,989
Iberia														
Oct-Dec 99	3,712	3,659	53	179	50,227.6	34,606.8	68.9	7.39	7.28	21,877				
Jan-Mar 00														
Apr-Jun 00														
Jul-Sep 00														
Oct-Dec 00														
Jan-Mar 01														
Apr-Jun 01														
KLM														
Oct-Dec 99	1,450	1,479	-29	-17	19,014.0	14,434.0	75.9	7.63	7.78		3,280.0	2,550.0	77.7	35,128
Jan-Mar 00	1,361	1,436	-75	-142	18,627.0	14,084.0	75.6	7.31	7.71		3,238.0	2,453.0	75.8	35,348
Apr-Jun 00	1,600	1,509	91	39	18,730.0	15,149.0	80.9	8.54	8.06		3,276.0	2,549.0	77.8	27,267
Jul-Sep 00	1,615	1,445	170	100	19,386.0	16,378.0	84.5	8.33	7.45		3,359.0	2,703.0	80.5	26,447
Oct-Dec 00	1,617	1,574	43	4	19,050.0	14,715.0	77.2	8.49	8.26		3,316.0	2,618.0	78.9	26,349
Jan-Mar 01	1,360	1,422	-62	-77	18,056.0	13,805.0	76.4	7.53	7.88		3,230.0	2,471.0	76.5	26,538
Apr-Jun 01	1,507	1,487	20	17	19,231.0	15,200.0	79.0	7.84	7.73		3,322.0	2,526.0	76.0	27,211
Lufthansa* **														
Oct-Dec 99	3,398	2,964	434	378	29,120.0	20,313.0	69.8	11.67	10.18	10,807	5,503.0	3,930.0	71.4	66,207
Jan-Mar 00	2,831	2,742	89	11	28,599.0	19,781.0	69.2	9.90	9.59	10,355	5,422.0	3,751.0	69.2	67,489
Apr-Jun 00	3,346	3,123	223	400	31,865.0	24,405.0	76.6	10.50	9.80	12,249	5,988.0	4,338.0	72.4	68,000
Jul-Sep 00	3,375	2,993	382	182	32,654.0	25,878.0	79.2	10.33	9.17	12,849	6,156.0	4,536.0	73.7	
Oct-Dec 00	3,750	3,148	602	10	30,682.0	22,096.0	72.0	12.22	10.26	11,547	5,997.0	4,293.0	71.6	69,523
Jan-Mar 01	3,222	3,202	20	-80	30,223.0	21,232.0	70.3	10.66	10.59	10,903	5,781.0	3,953.0	68.4	72,279
Apr-Jun 01	4,119	4,045	74	41	30,658.0	22,930.0	74.8	13.44	13.19	12,236	6,371.0	4,239.0	66.5	85,771
SAS														
Oct-Dec 99	1,210	1,083	127	138*	8,227.0	5,210.0	63.3	14.71	13.16	5,536				27,201
Jan-Mar 00	1,145	1,179	-34	-33*	8,253.0	4,992.0	60.5	13.87	14.24	5,314				28,060
Apr-Jun 00	1,289	1,176	113	112*	8,492.0	6,004.0	70.7	15.18	13.85	6,236				28,295
Jul-Sep 00	1,122	1,070	52	33*	8,496.0	6,155.0	72.4	13.21	12.59	5,943				28,485
Oct-Dec 00	1,310	1,131	179	174*	8,541.0	5,492.0	64.3	15.34	13.24	5,747				27,767
Jan-Mar 01	1,183	1,175	8	2*	8,558.0	5,286.0	61.8	13.82	13.73	5,482				29,985
Apr-Jun 01	1,345	1,329	16	18*	9,144.0	6,227.0	68.1	14.71	14.53	6,279				30,499
Swissair**														
Oct-Dec 99	2,344	2,272	72	125	21,934.0	16,839.0	76.8	10.69	10.36	6,081				
Jan-Mar 00	SIX MONTH FIGURES													
Apr-Jun 00	1,916	2,006	-90	2	25,476.0	18,241.0	71.6	7.52	7.87	9,162	3,972.8	2,719.6	68.5	
Jul-Sep 00	SIX MONTH FIGURES													
Oct-Dec 00	2,179	2,069	110	-1,650	23,540.0	17,677.0	75.1	9.27	8.79	5,890	4,296.2	3,007.4	70.0	
Jan-Mar 01														

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.

Aviation Economics

The Principals and Associates of *Aviation Economics* apply a problem-solving, creative and pragmatic approach to commercial aviation projects.

Our expertise is in strategic and financial consulting in Europe, the Americas, Asia, Africa and the Middle East, covering:

- Start-up business plans
- Antitrust investigations
- Credit analysis
- Privatisation projects
- Asset valuations
- Turnaround strategies
- Merger/takeover proposals
- Corporate strategy reviews
- IPO prospectuses
- E&M processes
- State aid applications
- Competitor analyses
- Market forecasts
- Cash flow forecasts
- Distribution policy

For further information please contact:

Tim Coombs or Keith McMullan

Aviation Economics

James House, LG, 22/24 Corsham Street, London N1 6DR

Tel: + 44 (0)20 7490 5215 Fax: +44 (0)20 7490 5218

e-mail:kgm@aviationeconomics.com

SUBSCRIPTION FORM

☐ **Please enter my Aviation Strategy subscription for: One year (12 issues) @ £390 / € 625 / US$625, starting with the ..... issue**

(Discounts available for multiple subscriptions - please call for details)

Delivery address

Name .....

Position .....

Company .....

Address .....

.....

.....

Country ..... **Postcode** .....

Tel ..... **Fax** .....

e-mail .....

DATA PROTECTION ACT

The information you provide will be held on our database and may be used to keep you informed of our products and services or for selected third party mailings

☐ **I enclose a Sterling, Euro or US Dollar cheque, made payable to: Aviation Economics**

☐ **Please invoice me**

☐ **Please charge my AMEX/Mastercard/Visa credit card**

Card number .....

Name on card ..... Expiry date .....

☐ **I am sending a direct bank transfer of £390 net of all charges to Aviation Economics' account:** HSBC Bank

Sort code: 40 04 37 Account no: 91256904

Invoice address (if different from delivery address)

Name .....

Position .....

Company .....

Address .....

.....

.....

Country ..... Postcode .....

PLEASE RETURN THIS FORM TO:

Aviation Economics

James House, LG

22/24 Corsham Street

London N1 6DR

Fax: +44 (0)20 7490 5218