

## International Aviation: Pressures for Change

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### Abstract:

In the post World War II era of international aviation the passenger transport task has been managed within a highly regulated regime which remained virtually unchanged until the 1970s. This paper reviews the pressures for change which have emerged since the 1970s. Numerous changes have been initiated by both governments and airline carriers. These changes have included moves: to wholly or partly privatise carriers; to deregulate domestic aviation markets; to liberalise bilateral agreements; to form single aviation markets; to increase the ability of airlines to respond to market factors; to raise necessary capital; and towards globalisation through various strategic alliances.

World wide the pace of change has been uneven and no coherent pattern has emerged to replace the existing system. What has developed so far is a modified, more flexible system rather than a new system. The structure of a future system remains uncertain.

*The views expressed in this paper are those of the author, and do not necessarily represent those of the Bureau of Transport and Communications Economics*

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## INTRODUCTION

International aviation today operates in a dynamic environment. Almost every facet of the conventional aviation system is experiencing increasing pressures challenging it to change. This is in direct contrast to the fixed regulatory system (see Snapshot 1 for details) which dominated international aviation from the mid 1940s to the 1970s.

Governments have been key players in the aviation industry, in many instances being the direct service provider as well as international negotiator of air rights. The aviation industry has traditionally enjoyed a 'special' position of privilege in government policy quite different from other service industries. The industry (in particular the airline carriers) has often been established and supported for reasons of national prestige, national economic development, and strategic and/or defence considerations.

The airline business is volatile. The industry has difficulty in matching demand and supply as it is subject to fluctuations due to:

external political, social and economic factors; and the

cyclical nature of the industry.

The impact on the airlines of the fuel crises of 1973 and 1979, and the recent Gulf Crisis, highlight the influence of external factors on airlines. With low profit margins (see Snapshot 2) the airlines are vulnerable to sudden and significant hikes in fuel prices as fuel accounts for about 15% of costs. Further, both an increase in terrorism and an unease in regards to security, (eg after the Chernobyl nuclear accident, the US's bombing of Libya and the Gulf Crisis) had an important impact on airline operations.

1990-92 has been a turbulent period for the aviation industry, especially the airlines. The years 1990 and 1991 were the worst financial years on record for the airlines. Robert Crandall, Chairman of American Airlines, the world's biggest airline, summed up 1991 by saying, 'The best you can say about last year is that it's over' (*The Economist* 1992 p. 63). He believes that the two years 1990 and 1991 wiped out all the profits the US airlines had achieved since the commencement of air travel (Hendersen 1992 p. 31). 1991 was the first year in modern aviation to record negative traffic growth, with the preliminary estimate for international aviation being a 6% decline.

The Gulf Crisis and world recession in the early 1990s did not *cause* the airline carriers' difficulties but they did *exacerbate* their problems and left many airlines with little room to manoeuvre. 1990-92 dramatically revealed the problems facing the industry and added some urgency to the pressures for change in aviation.

**SNAPSHOT 1 THE REGULATORY REGIME**

The supporting pillars of the conventional regulatory system are:

International Civil Aviation Organisation (ICAO);  
International Air Transport Association (IATA); and  
Bilateral Air Service Agreements.

The first step in the modern era of international air transport was the Chicago Conference in 1944. Representatives from fifty-two allied countries met to plan the future of international civil aviation. The Chicago Convention established ICAO, an inter-government organisation under the umbrella of the United Nations. It came into force on 4 April 1947. It was from the Chicago negotiations that the concept of 'freedoms' was defined as the new principle of air law. These freedoms (ie traded rights) are the subject for bilateral negotiation in air service agreements. They include: the right of airline(s) to fly over another country, with prior approval; the right to stop in another country for technical reasons such as refuelling and maintenance; the right to carry traffic to and from another country; and the right to carry traffic between two countries outside of the country of registry providing the flight originates or terminates in the home country.

Airline representatives met in Havana in 1945 to resolve how prices would be determined for international passenger travel and related cooperative arrangements. The group established IATA as an inter-airline association, its primary role being to set airline fares and cargo rates. In the earlier decades the regulatory arrangements for setting tariffs provided a system which was widely accepted and fostered a stable period for the orderly development of international aviation and remained largely unchallenged until the mid 1970s.

Prior to 1979 IATA's tariff setting process divided the world into three conferences: Americas, Europe-Middle East-Africa, and Asia Pacific. These conferences met in secret for four to six months to achieve agreement on the tariff structure. Doganis (1991 p. 37) reported that some 200 000 separate passenger fares and more than 100 000 cargo rates were negotiated together with complex conditions of service with each fare, even down to whether to charge for a headset or serve a meal. Once agreement had been reached the three conferences would combine and the entire group was then required to agree unanimously to the fare structure and associated conditions. Any airline, regardless of size, could veto a proposal which meant that the whole process had to begin again. By the 1970s the system proved to be inflexible, costly and time consuming to sustain.

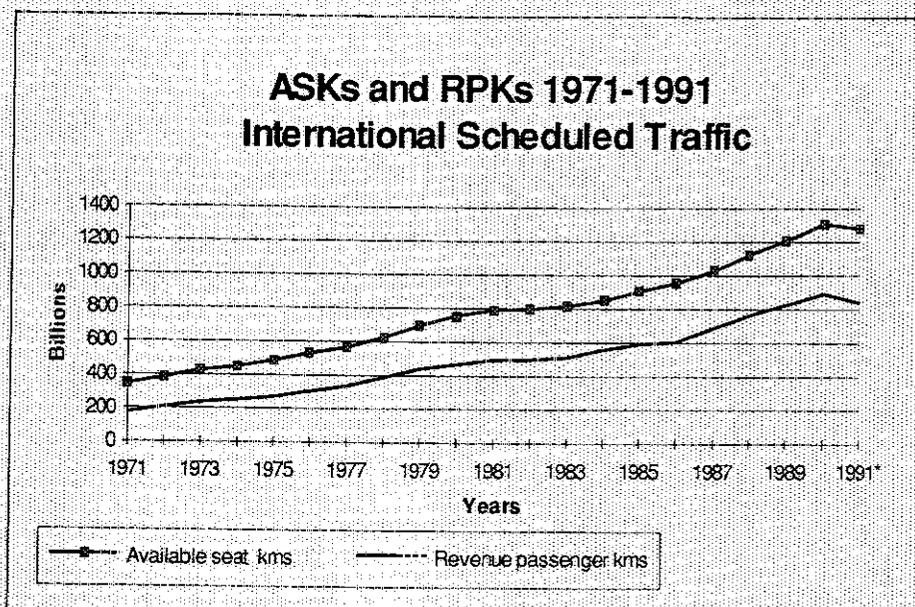
Bilateral Air Service Agreements are negotiated at a government to government level, the outcome of which is dependent on the negotiating power and current aviation policies of the countries involved. The major provisions in many of the agreements were originally based on the 1946 agreement between the US and the UK, known as the Bermuda I Agreement. The actual provisions vary in each agreement but they can include aspects on: market access; named routes to be served by each country; which freedoms would be granted; capacity or number of seats; frequency of flights; and method for determining tariffs. The overall effect has been to create a highly regulated but orderly arrangement for the development of international travel between two countries. Currently there are more than 2000 bilateral agreements throughout the world, with some 41 bilateral agreements involving Australia.

**SNAPSHOT 2 AIRLINE INDUSTRY**

The world airline industry has:

- approximately 700 airlines (around 40 airlines operate into Australia);
- SUS700 billion output per annum;
- 21 million jobs;
- 10 000 commercial turbo jets in operation and more than 1000 parked and idle;
- over 40 years of uninterrupted growth in annual traffic, abruptly stopped in 1991;
- a revenue passenger kilometres (RPKs) average annual growth rate of 8.2% since 1971 (a measure of demand) -see figure 1;
- an available seat kilometres (ASKs) average annual growth rate of 6.8% since 1971 (a measure of capacity) -see figure 1;
- traffic growth between 1980-89 was highest (and likely to continue) in the Asia Pacific market (8.3%), and lower in Europe (excluding the then USSR) (5.7%) and in North America (4.9%) with a world average annual growth of 5.3% (Airbus Industrie 1991 p. 25);

**Figure 1**

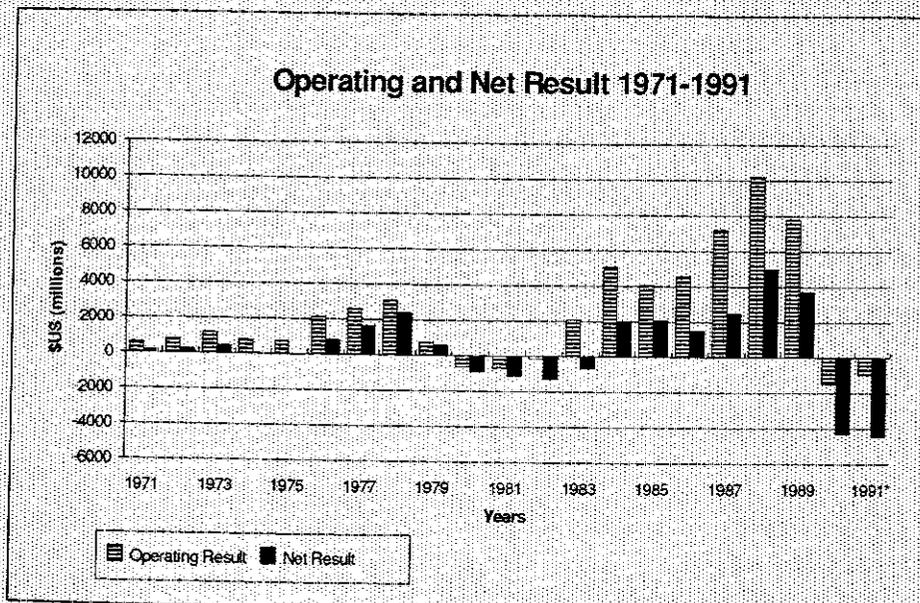


*Note* \* 1991 preliminary results

*Sources* ICAO 1992, 1991, 1988 1984, 1981; *The Avmark Aviation Economist* 1992, p. 24

- a concentrated market by region and by route exists - North Atlantic route accounts for nearly 40% of traffic (Tenenbaum 1991);
- a history of low profits - see figure 2, Avmark calculated the net profit margin to be barely over 1% over the last 25 years (*The Avmark Aviation Economist* 1991, p. 8);
- net loss of \$US4.3 billion in 1990 and a preliminary estimate of a net loss of \$US4.5 billion in 1991;
- rising costs (including labour, fuel, interest paid on capital, insurance, and security), outstripping revenue gains, and difficulty in controlling airline costs due to external factors;
- the continuing consolidation and liquidation of airlines;
- capital requirement estimated to exceed \$US450 billion in the next ten years for aircraft purchases alone; and
- concern about the debt to equity ratio facing most airlines.

Figure 2



Note \* 1991 preliminary results

Sources: ICAO 1992, 1991, 1988, 1984, 1981; *Air Transport World* 1992, p. 9

## PRESSURE FOR CHANGE

The question is: What pressures and consequent developments have contributed to moves to change the well established conventional regulatory system in international aviation?

The main pressures have come from economic and market imperatives, and changing political priorities. *Governments* driven by the need for competition to improve economic efficiency and growth prospects have moved to wholly or partly privatise their carriers; to deregulate domestic aviation markets; to liberalise bilateral agreements; and to form single aviation markets. Airline *carriers* aiming at increasing their competitiveness, thereby ensuring survival, have moved to increase their ability to respond to market factors (eg the setting of tariffs); to raise necessary capital and to improve profit levels; and towards globalisation through various alliances.

There are other pressures which are challenging the traditional operation of aviation, including the changing growth patterns and importance of various markets; increased congestion (of the airways, runways, terminals, and connecting transport networks); the inadequacy of some of the infrastructure; new environmental standards; and developments in associated industries.

All these developments bring into question the continuing appropriateness of the principles of substantial ownership and effective control in particular, and to a much lesser extent exclusive national sovereignty, these three principles are at the heart of the regulatory regime.

Change to the traditional regulatory regime has occurred at an uneven pace throughout the world and without a coherent pattern emerging to replace the existing system. What has developed so far is a modified, more flexible system rather than a new system. Many aspects of the aviation system are changing but the future direction of that change is uncertain. Countries and carriers are still divided on how best to proceed.

### Pressure to free tariffs

In the 1970s and 1980s there were growing pressures to increase the level of competition, especially by freeing up prices. Subsequently IATA's traditional price setting role declined and its focus changed. This was one of the first major breaks in the conventional regime.

Pressure points for change in the setting of tariffs under IATA procedures include:

- the growth and success in the 1970s and 1980s of new non IATA carriers, especially from newly developing countries including many in the Asian market such as Singapore Airlines, Thai International and Cathay Pacific;
- the economic deregulation of the US domestic airline industry in the late 1970s (this market encompasses close to 40% of total world aviation passenger kilometres performed) and the move to establish a liberalised internal EC market in the 1990s will maintain this pressure;

- the increase of non scheduled or charter services - they are a significant part of the European market, but there has been a gradual blurring of the distinction between scheduled and charter flights in recent times;
- an increasing number of liberal bilateral agreements which sought to increase competition in the market, especially by introducing a more flexible approach to setting tariffs, in particular on the North Atlantic route; and
- an increase in the adoption of competition policy and a move against cartels in a number of economies (eg US, Europe, Australia).

Although IATA tariffs are still the preferred prices for many, the newer more flexible system means that airlines are able to vary their tariffs. IATA receives exemptions from anti-trust regulators but future exemptions, by the US and the EC in particular, can not be guaranteed. Both claim jurisdiction over aspects of competition involving carriers from elsewhere operating into and out of their shores. While intense political lobbying would be expected if the exemptions were to be abandoned, the general move to increase competition in the aviation market does bring into question the validity of maintaining any form of price setting. At the moment it is a *potential* rather than actual threat.

Currently the airlines operate in a modified tariff setting system, one that has changed markedly since the 1970s but retains many features of the conventional system.

### **Privatisation**

A key pressure for change in the regulatory framework has come from the decline in the role of many governments in aviation, in particular in the reduction of state ownership of airlines and the deregulation of domestic aviation markets (US, Canada, Chile, Australia). Governments from regions as diverse as South America, Europe, North America, Asia Pacific and Africa have reduced their direct involvement by privatising part or all of their national airline(s). See table 1 for a listing of the status of a number of airlines in relation to privatisation. In recent times, some governments have postponed or scaled down their privatisation processes because of the current economic circumstances and/or unacceptable bids but this is expected to be a short term trend only.

Table 1 AIRLINE PRIVATISATION

Full Privatisation	Partial Privatisation (Current or Completed)	Privatisation (Planned)	Government Owned
Air Canada	Air Pacific	Adria Airways	Aer Lingus
Air New Zealand*	Aeromexico	Aeroflot derivatives	Air France
British Airways	Air Afrique	Aerolineas Argentinas	Air Jamaica
JAL	Air Caledonie	Air India	Air Lanka
Korean Air	Air Madagascar	Air Zaire	Air Malta
LAN Chile	Air Mauritius	Balkan Bulgarian	Air Niugini
	Alitalia	BWIA	Air Seychelles
	Austrian Airlines	CSA (Czech)	Air Vanuatu
	Aviateca	Iberia	Air Zimbabwe
	Cathay Pacific	Indian Airlines	Bahamisair
	Cyprus Airways	Kenya Airways	Binan Bangladesh
	Finnair	Lloyd Aero Boliviano	Egypt Air
	KLM	LOT Polish Airlines	Emirates
	Lufthansa	Malev	Ethiopian Airways
	Luxair	Nigeria Airways	Garuda
	Malaysian Airlines	Olympic	Gulf Air
	Mexicana Airlines	PLUNA	JAT Yugoslav AL
	Middle East AL	Qantas	Kuwait Airways
	Pakistan International	Royal Jordanian AL	Polynesian
	Philippine Airways	South African Airways	Royal Brunei
	Royal Air Maroc	TAP Air Portugal	Royal Tongan
	Sabena	Tarom	Saudia Arabian
	SAS	THY Turkish Airways	Solomon Airways
	Singapore Airlines	Uganda Airways	Zambia Airways
	Swissair		
	Thai Airways		
	Varig		
	VASP		
	Viasa		

*Note* \* New Zealand Government holds a golden share which gives it right of control.

*Source* BDW Aviation Services 1992, p. 2; Cameron 1992, pp. 40-45; Fisher 1991, pp. 14-21; Hamill & Sarfield 1992, pp. 29-129; *ITA Press* 1992, p. 5

Some of the stated reasons contributing to this world trend towards privatisation include:

- the need to raise further capital for operational and investment purposes for the airlines;
- the need to reduce or eliminate the drain of funds from the public sector;
- a desire by governments to raise finance from the sale of government enterprises;
- the belief that there is a need to encourage better commercial practices in airlines by withdrawing political objectives and bureaucratic procedures in the decision making process; and
- the desire to open the market to more competition to achieve a more efficient resource utilisation.

In essence the ever increasing capital needs of governments and airlines, and the relative shortfall in capital available and its increased cost to airlines, have influenced governments and carriers to seek a solution through privatisation

Lim Chin Beng of Singapore Airlines (1989 p. 47) commented that supporters of the privatisation of government enterprises argue that economic benefits are derived from the:

- better commercial practices, especially in marketing and speed of decision making (British Airways is frequently cited to support this claim);
- widening of the shareholder base and the need to be fully accountable to non government shareholders with an emphasis on profitability; and
- freedom to seek capital investment (eg to buy or lease aircraft) from various areas, rather than just being another government body bidding for limited government funds.

Privatisation of airlines is causing the radical restructuring of many of the world's airlines with consequences for the structure and conduct of the whole industry. The move to privatise many airlines is adding pressure to free up aviation markets, including the decision by some countries to further liberalise bilateral agreements, and to permit further foreign equity holdings in carriers. In many countries such as Australia, the government's special relationship with airlines is moving away from owning and running an airline, to assessing and assisting the country and other industries, like the travel and tourism industry, to achieve consumer and national benefits from the total economic activity (Willis 1989 p. 1)

### Liberalising bilateral air service agreements

Bilateral agreements can constrain competition by setting limits on market access, supply and price; the latter particularly where fare flexibility is not encouraged by IATA tariffs being adopted. Historically there has been limited price competition therefore passengers and freight shippers have paid a higher price than may have been the case in a more competitive market.

With an increasing emphasis on competition, and fair and equitable treatment between trading nations there have been moves to liberalise bilateral agreements. The changes have included creating agreements which are less prescriptive, less able to be controlled by just one party to the agreement, and improve the commercial environment enabling greater market responsiveness. The moves to liberalise agreements vary between nations. While the rhetoric of many nations supports a more liberal environment, their actions often fall short of full liberalisation. Nevertheless moves to enhance competition by some nations acts as a model for future negotiations of air service rights.

One of the questions raised by a wide range of players in aviation is, if there is a radical shift away from the bilateral traditions, how will the new system be coordinated? At this stage no one international group or nation is in a position to take the lead to create a new system. Consequently there is much talk but little progress in replacing the bilateral system. The real change appears to be in the increased liberalisation of bilateral agreements.

It is a daunting task to create a new world order in international aviation. L.H. Slotmaker when addressing the symposium on 'Multilateralism vs Bilateralism' sponsored by the European Civil Aviation Conference (ECAC) said:

Of course, a general multilateral regime covering the whole world may be better in principle...we should finally abandon the irrelevant idea of a country's 'own' traffic and we should adopt the idea of a common market. Then we might succeed in solving the present difficulties in a way most favourable to the travelling public, the airline industry and the taxpayer' (Katz 1991 p 18).

This was in 1955. The long history of calls to adopt a multilateral system are evident in the literature but achieving it has proved elusive. If the bilateral system is to be replaced it is most likely it will be by gradual process. Untangling the web of history of bilateral agreements and replacing them is an enormous task.

ICAO held a world wide Air Transport Colloquium in Montreal in April 1992. More than 500 delegates from over 100 governments, airlines, airports and associations debated the role and future of the bilateral system which has controlled international aviation traffic rights since the 1944 Chicago Convention. The opinions expressed varied leaving the impression that the bilateral system will prevail for some time. There is the possibility that some nations and/or blocks may move to an expanding multilateral agreement where any number of countries would be free to participate under the one agreement.

A number of smaller countries expressed concern that while a multilateral system may be in the interests of large nations or blocks it could disadvantage them. Other representatives believe the bilateral system could accommodate a more liberal

approach without the creation of a new system. The support for at least a liberalised bilateral system, if not a multilateral system, has grown and the pressure is likely to continue as some powerful countries support such change. Nevertheless the bilateral system remains the chosen instrument of most nations for the near future (*World Airline News* 1992 p. 1)

Mathew Samuel of Singapore Airlines commenting on moves to reform the regulatory system to achieve a freer, more open system said: 'Aviation is still waiting for this new dawn' (Samuel 1991 p. 93).

### **Single aviation markets**

One of the emerging pressures for change to the conventional regulatory framework is the growth in transnational single aviation markets. These exist, or are being negotiated, in the EC, Scandinavia, the Americas (including one under the 1991 Andean Pact involving Colombia, Venezuela, Ecuador, Peru, and Bolivia), and Australia-New Zealand.

It has been rare in the past for air service agreements to involve more than two countries. When Norway, Sweden and Denmark formed Scandinavian Airlines Systems (SAS), the US Department of Transportation negotiated jointly with the three countries, but this was an exception.

New methods for negotiating previous bilateral agreements may become common place as nations or regions negotiate with another. Whether the system will be truly multilateral in nature or merely replace countries in the traditional bilateral negotiations with regions is unclear but some nations are arguing strongly that the bilateral system must be reformed or replaced. Such change would put into question the effectiveness of the principles of substantial ownership and effective control. In addition, the principle of exclusive national sovereignty over a territory's air space may be challenged in the future by single aviation markets. This will only be an issue if individual nations leave negotiations to one supra-national authority, as opposed to negotiating jointly while maintaining their separate national identity. It is too early to judge if this will be a consequence of the formation of any single aviation market.

It is the emergence of a single aviation market in Europe which may pose the greatest immediate challenge to the overall regulatory framework. It will require significant changes to member states' ways of negotiating and conducting their aviation business in Europe and it will have consequences beyond Europe. The creation of single aviation markets, where once there had been many separate nations, forces countries to respond to this significant structural change to the market.

### **Globalisation and alliances**

One of the most marked trends in recent times in the international aviation market has been the rush to globalisation. While relatively new, limited in scope and still in its infancy in aviation, the globalisation of enterprises is well developed in other industries such as petroleum, construction, print media, information technology and

car manufacture. The process is supported by the growing number of alliances which may or may not involve equity arrangements

Airline carriers still have quite a way to go to move from operating globally to being truly global enterprises, but the process has begun. The globalisation process in international aviation is constrained under the current regulatory framework, in particular by the substantial ownership and effective control provisions. Pressure has been mounting to change these requirements which could lead to a very different international aviation environment. Such barriers are not imposed on most enterprises in the traded goods sector but it is not uncommon in key service industries (eg post and communications).

Alliances can be used to achieve strategic, defensive or structural goals. There have been a variety of alliances proposed and entered into involving transnational arrangements in aviation. Many of the alliances offering technical cooperation have proven successful as have some of the more common marketing arrangements such as code sharing and interlining. These successful alliances are usually specific in purpose and for a fixed time period

What has proven more difficult to arrange and is uncharted in terms of proven benefits in public sources is the attempt to create corporate alliances. The following examples illustrate the mixed achievements of the efforts made to create transnational operations through broad based alliances involving equity holdings.

In late 1991 discussion was given to a possible global carrier being formed with the union of British Airways (BA) and the KLM Royal Dutch Airline, and indirectly with Northwest in which KLM holds a 49 per cent interest. While a full merger seemed unlikely, it would have been possible to jointly run parts of the operations under a holding company while maintaining a separate corporate identity. For example, a joint venture could coordinate maintenance, aircraft and fuel purchase, catering, staff training, computer reservation system (CRS), route structure, schedule timing, fares and the associated business of subsidiaries. Talks between the two carriers collapsed in February 1992 reputedly due to disagreement over the share which each airline would have in the new holding company and therefore the distribution of profits between the two carriers. The result was the abandonment - at least for the present - of these efforts to form a global carrier. BA is now negotiating with USAir with a view to finalising a major alliance.

The Swissair-Singapore Airlines-Delta global alliance began as a series of separate agreements which were patched together and made public in 1989 to form a loosely arranged alliance based on small cross equity holdings. The equity is based on equivalent dollar values but does not exceed a 5 per cent stake. The group has achieved some harmonisation of technical and marketing strategies but it still speaks of potential rather than achieved benefits. Hwang Teng Aun of Singapore Airlines believes that it is too early for the alliance to derive benefits. Kolakowski from Delta believes the alliance is experimental and that '...the jury is still out in a number of areas' (Jennings 1991 p. 42). While the agreements have not collapsed, it is perhaps a little early to draw any conclusion on the merits of the alliance.

SAS (Denmark, Sweden and Norway) has achieved considerable success as a transnational company based on significant equity holdings. In addition to this alliance, SAS has pursued various equity and/or marketing arrangements with

Continental Airlines (10%), Airlines of Britain (24.9%), LAN-Chile (30%), the European Quality Alliance, All Nippon Airways, and Thai Airways International.

While various benefits have been claimed in support of alliances, a major reason is the increased access to a larger route network and a raised load factor. To illustrate, SAS offered around 50 destinations but with its various alliances this increased to 250 destinations (Ott 1990 p. 42). To reap such benefits it is important that any added route in the network is a complementary not competitive route, as the latter can weaken an alliance.

In addition, alliances have the potential for partners to reduce costs through cooperatively sharing such activities as maintenance, ground facilities, training, computer reservation system (CRS), and the purchase of fuel and aircraft. At congested airports, alliances can do a lot to reduce landing restrictions and overcome other constraints faced by specific airlines. Alliances can improve an airline's capacity to raise finance and value to shareholders. Some airlines which have alliances with European or US carriers hope it will lead to better access to intercontinental markets.

In summary, initiatives to form global networks through alliances have had mixed results but remain an important trend. Much of the literature expounds on the benefits, usually potential rather than actual, of at least alliances if not full globalisation of airlines. There is little public evidence that the assumed benefits (and frequently ignored or rarely referred to costs) have been systematically and rigorously analysed in relation to airlines. In fact, many speak of 'gains' more as a statement of faith rather than drawing conclusions based on demonstrated results.

Growth through merger and acquisition of airlines even within one country is not achieved without considerable cost, and the benefits are at least questionable and take some years to assess. For instance, this has been the experience of Northwest in its take over of Republic Airlines in 1986 and Air France's experience with UTA; both demonstrate how difficult it is to align and merge previously separate companies even without the complications of cross border aspects.

It is reasonable to hypothesise that success will not be automatic as airlines attempt to become global enterprises. What is not known is what the net result will be and the time frame needed for the process to settle down from the initial disruption phase. ANZ McCaughan (1992 p. 8) states that, '... there is no clear evidence of success of these alliances to the benefit of shareholders'. This is important if the strategy is more than a defensive move. The stakes are high in international aviation; estimates point to almost a doubling of passenger traffic by the year 2000 (*Wall Street Journal* 1991 p. A1).

Not all airlines support the need to form global mega carriers through alliances (eg American Airlines) but some carriers have shown a keen desire to pursue alliances (eg British Airways, SAS, Northwest). Studies, such as that done by Salomon Brothers (1991 p. 6), have suggested that alliances are inherently unstable. Aviation trade journals provide information which is divided in opinion on alliances. The jury, it would appear, is definitely still out on the value of alliances. Nevertheless the moves to form global networks and/or enterprises is a very significant development as it increasingly challenges the very principles of the conventional aviation system.

### **Ownership and control provisions**

If globalisation of carriers occurs can the current conventions be maintained? The rules on substantial ownership and effective control are at the heart of the conventional regulatory system and appear to prohibit the development of global enterprises in aviation (as distinct from airlines which operate across the globe).

The increasing pressure by some countries to liberalise bilateral agreements has moved from an earlier emphasis to free up tariffs and increase competition to encompass the issues of ownership and control. Countries supporting such a move differ in their suggested solutions to the issues, some wish to distinguish between ownership and control, while some argue ownership and control restrictions should be eliminated or reduced from a substantial level to a new, yet to be determined, level. Such moves are not entirely new. For example, bilateral agreements with Hong Kong adopt a more liberal approach to the issue by replacing the traditional requirements for substantial ownership and effective control by respective nationals with the requirement that the airline is incorporated and has a principal place of business in Hong Kong. This change is necessary because Cathay Pacific's ownership is held by non Hong Kong residents. More has been achieved in breaking down the rigidity of the requirements on ownership and control in the all cargo area: cargo agreements offer a model for changing passenger traffic agreements.

It is possible that if rules regarding national sovereignty, substantial control and effective ownership existing in the conventional system are sufficiently relaxed then world aviation could be composed of no more than a dozen mega carriers. Consolidation of airlines seems the likely consequence of deregulating markets, given US experience and predictions for Europe. In the US, with consolidation, American, United, Delta, Northwest and USAir now share 71 per cent of the traffic and 21 of the 29 major hubs. If international aviation develops a strong hub and spoke network, at least in the major markets, there would be added pressure for airlines to consolidate.

This would represent a major restructure of the international aviation industry. An increased concentration of ownership may lead to some countries foregoing the services of their traditional flag carrier. To achieve this scenario the current aviation system would have to be changed radically (or cease to operate effectively).

The move to globalisation is not limited to the airlines. It is occurring in other parts of aviation activity including the computer reservations system (CRS) and airframe manufacturing; as well as communications systems and financial institutions. These developments in related areas have added pressure for airlines to operate in a more competitive environment with less government intervention and reduced transborder constraints facilitating airlines to become transnational companies.

The move towards globalisation of airlines provides a real challenge to the current international aviation regime and future policy analysis and development.

## CONCLUSION

Pressures have been growing to change the conventional regulatory regime in international aviation. Governments and carriers have responded to the challenge by implementing a number of changes which have chipped away at the system established nearly fifty years ago. The pattern and pace of change has not been even and the recent difficulties of 1990-92 added some urgency to the need to change. No one path appears to have attracted all (or most) airlines and/or governments. This creates some difficulty for those responsible for planning in an industry that requires huge capital investment, and long lead times between investment and achieving benefits.

Legal arrangements, in particular through the regulatory framework, have dominated much of the conventional international aviation developments but economic and market imperatives are rising in importance in determining the future structure of international aviation. Given the uncertainty of the nature of the future system the interim system is likely to offer something of the old, coupled with modifications of that system, to create new aspects to a tradition of nearly half a century. Any attempt to predict the future structure of international aviation is highly speculative.

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