Aviation Trends in the New Millennium

Ruwantissa I. R. Abeyratne

AVIATION TRENDS IN THE NEW MILLENNIUM

This book is dedicated to the memory of the late Trevor Pyman,
who introduced me to air law at Monash University

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Foreword

It gives me much pleasure to write a Foreword to the latest work of Dr Ruwantissa Abeyratne, a scholar who has made a significant contribution to the literature on international aviation law. This work of Abeyratne looks far into the future and addresses numerous questions which may seem futuristic or inconsequential now, but are certain to be of growing importance as tourism increases and airline passenger traffic reaches unprecedented levels.

At an individual level, he analyses in depth such questions as mental injury, unruly passengers, the spread of tuberculosis in aircraft cabins and the impact of turbulence on passengers. At a global level, he makes a survey of the aviation industry in different regions, and has valuable insights to offer on the vast range of problems peculiar to each region which need attention. The book thus traverses the whole fascinating field of aviation law, from micro to macro level, offering the reader a valuable synthesis of the principles applicable.

Many of the subjects treated, especially those relating to injuries, require a mastery of the principles of domestic law, as well as of the relevant principles and conventions of international aviation law. Dr Abeyratne has examined both in depth, and integrated the applicable principles in a manner useful to all practitioners. This fast-developing area of international law may turn out to be an important source of claims and litigation domestically as well. Matters such as these will not infrequently come within the range of work of the average legal practitioner who has not, thus far, had occasion to pay more than passing attention to them. Indeed, aviation law furnishes an apt illustration of the way in which legal practice in the future will be transformed in a manner requiring a knowledge of domestic and international law. This book serves this need extremely well.

The book also grapples with sophisticated information-based problems of the future, such as problems of slot allocation and functioning of computer reservation systems on the Internet. It also moves into traditional areas of public international law, as when it addresses problems related to refugees and inadmissible passengers. The new Convention for the Unification of Certain Rules for International

Carriage by Air, signed on 28 May 1999 by the Contracting States of the International Civil Aviation Organization, was intended to make a fundamental change in private air carrier liability. It heralded the need for a fresh approach to this problem which is as old as the aviation industry itself. This book fills the need for a new approach to air carrier liability problems which is consonant with the requirements of the new regime instituted by the Convention.

Throughout the book there runs the principle that the survival of airlines is dependent on service and its improvement. The book underlines the fact that service, however good it may be in some departments, is quite inadequate other than in the context of quality aircraft. An improvement of service is not, however, necessarily restricted to a few mega-carriers. Smaller carriers can also offer comparable services. This book, through its insightful analysis of the problems of the industry, especially in its legal aspects, will be invaluable to all carriers in showing them how best they can bring their entire services into line with customer expectation and, in particular, with the latest requirements of the law.

This comprehensive survey of the field by an able scholar, whose specialization in air law has already earned him considerable attention, will be a leading contribution both to the literature on aviation law and to a better understanding of the manner in which the problems attendant on the airline industry can be addressed and overcome. It is a work of great value, not only to the international lawyer and the specialist in aviation law, but also to the domestic lawyer, and to all those who are involved in the aviation industry. It is also true to its title, in that it charts long-term trends in one of the most rapidly moving spheres of international activity.

I commend this volume and wish it the special success that it deserves.

C.G. Weeramantry
Judge and Vice President,
International Court of Justice,
The Hague

11 February 2000

Preface

On 28 May 1999, Contracting States of the International Civil Aviation Organization (ICAO) signed the new Convention for the Unification of Certain Rules for International Carriage by Air, which emerged from the International Conference on Air Law, held in Montreal from 10 to 28 May 1999. The new Montreal Convention, once it receives the 30th instrument of ratification, is intended to draw together the various scattered pieces of treaty which govern the regime of private air carrier liability. It was also the last major initiative of ICAO before the dawn of the year 2000. The Montreal Convention symbolizes the compelling need for the aviation community to focus on new issues and to refurbish old ones in an appropriate garb for the dawning millennium.

There are two types of mega trends affecting the aviation industry today: country mergers and airline mergers. Both these trends affect the airline industry profoundly. Of these, the unification of Europe is the largest single influence on international airlines. On 1 January 1993, 12 European countries commenced sharing their air traffic rights and strengthening their airlines' marketing potential. Ever since, there have been significant developments within Europe sufficient to change completely the face of the aviation industry in the region over a short span of seven years.

In the new millennium, individual airlines would be compelled to remain competitive, just to survive. They would need to flow with the tide of such commercial trends as privatization, the use of information technology, removing infrastructure constraints and governmental restraints and, most importantly, changing travel patterns. These trends have given rise to the new phenomenon in the global aviation scene that survival (if not success) of airlines is now dependent not on pricing but on service. This new phenomenon calls for the airline product to be similar to one from the entertainment industry, bearing in mind that a passenger spends 70 per cent of his total travel time in the aircraft on long-distance flights. To counter strong alliances between countries and airlines, the smaller carriers (as well as the big ones) are now going in more for glamour and in-flight luxury to score on the 70 per cent in-flight time. Personal video screens for

every seat, satellite-assisted telephone facilities and tele-conference services are some of the luxuries offered. Indeed, as David Shoenfeld, International Marketing Vice President of Federal Express said, 'if you view your services as flying between terminals, you miss the point'.

The view that 'marketing is determined from the view of the customer' is becoming more valid now than ever before. To survive, airlines have to build 'brand recognition'. In this context, the International Travel Market Research (INTRAMAR) study is one of the best indicators of the key strategic factors towards achieving passenger satisfaction. INTRAMAR usually measures for each airline a PAX/SAT (passenger satisfaction) index that correlates closely with the major indicators of airline performance. An INTRAMAR study, conducted on 44 of the world's most profitable and financially successful airlines, reveals that Singapore Airlines received an extremely high PAX/SAT index rating, coming second among all airlines of the world. The first was Swissair.

According to the INTRAMAR survey, there are 12 important factors influencing passenger choice: flight punctuality; excellence of in-flight service; superiority of aircraft; comfortable seats; clean cabins, seats and washrooms; good food and beverages; superior first class; superior business class; efficient reservations systems; pricing; good check-in service and attractive frequent flier programmes. At least seven of these factors are entirely dependent on the quality of the aircraft. The foremost important factor – punctuality – cannot, indeed, be achieved with aged aircraft. The matter becomes more crucial to a relatively small airline, running a small fleet of aircraft where, if one aircraft is grounded for reasons of repair or maintenance, the entire flight schedule of the airline will be in disarray, leading to delays down the line. Connecting services will be disrupted and passengers stranded. It is easy to envisage the effect this catastrophe would have on the airline's good name. No amount of superior in-flight service would atone for a six-hour delay where a connecting passenger has to sit inside an unknown airport terminal. It is therefore necessary for any airline to seriously consider removing one of its most burdensome infrastructural constraints – its ageing aircraft.

Another compelling reason for airlines to enter into commercial alliances, modernize their fleets and enter into other new trends such as franchising and leasing is that ageing aircraft do not conform to noise restrictions imposed by many countries and thus face being barred from certain airports. The noise issue has become a crucial environment issue in the world aviation community. At the 27th Session of the Assembly of the International Civil Aviation Organization (ICAO) held in Montreal in 1989, when the matter of possible

noise restrictions on subsonic jet aircraft was taken up, the main concern of the Assembly was to achieve a balance between the desire to protect the environment around airports against unnecessary noise and the desire to avoid excessive costs associated with accelerated replacement of noisier aircraft, particularly where these aircraft were registered in countries which did not themselves intend to introduce noise-related operating instructions. In the sessional discussions, The Airport Associations Coordinating Council (AACC, now Airports Council International, ACI) noted that aircraft noise represented a major constraint upon the future viability and capacity of the aviation system. Unless concerted international action was taken, there would be a proliferation of various local legislation banning noisy aircraft from their airports – a measure that would have a devastating effect on air commerce. The International Air Transport Association (IATA) representing the airlines at the session noted that the airline industry recognized the need in many states to address political and other concerns relating to the environment and the fact that the noise climate in areas adjacent to airports is linked to the ability of airports to provide expanded travel facilities to meet the growing demand of air travel. The ICAO Assembly ultimately decided that further time was necessary for consultation and analysis with a view to reaching consensus, and deferred the issue to the 28th Session (Extraordinary) of the Assembly which was held in Montreal in October 1990.

At its 28th Session (Extraordinary), the ICAO Assembly, by its Resolution A28-3 determined to urge states not to commence phasing out noisy aircraft until 1 April 1995, and to spread out the phasing-in period over seven years from 1 April 1995, so that airlines would have time to renew their aircraft fleets or hush-kit them (silence the engines of aircraft) to conform to prescribed noise levels. ICAO further urged states not to restrict before the end of the phase-in period the operations of any aircraft less than 25 years of age from the date the aircraft was issued with its first certificate of airworthiness and to assist aircraft operators in their efforts to accelerate fleet modernization.

The standards of the international community on ageing aircraft are now clear. States have been given the right by the international civil aviation community to start phasing out aircraft from 1 April 1995, continuing until the year 2002. What this means is that airlines that have in their fleets ageing aircraft would have to commence modernizing their fleets soon. If they fail to modernize their fleet their ageing aircraft will not be admitted to countries which have phased them out by legislation. The need for modernizing ageing aircraft fleets has become more compelling than ever, and is amply reflected by the recommendations made by the Fourth Meeting of

ICAO's Committee on Aviation Environmental Protection (CAEP) which was held from 6 to 8 April 1998. CAEP has recommended the reduction by an average of about 16 per cent levels of nitrogen oxides (NO_x) that aircraft engines are currently allowed to emit under Annex 16 to the Chicago Convention. CAEP has also recommended that states implement ICAO's new Communications, Navigation, Surveillance and Air Traffic Management systems (CNS/ATM), thereby implicitly requiring aircraft to be equipped with the modern facilities on board to comply with the satellite navigation systems introduced by the CNS/ATM systems.

Another measure taken by CAEP at its Fourth Meeting which would have a serious impact upon airlines with ageing fleets, needing them to consider the modernization of their fleets, was CAEP's commitment to carry out more work in the future to establish new noise standards for jet aeroplanes that would be more stringent than the present Chapter 3 Standards in Annex 16 of the Convention on International Civil Aviation.

ICAO records that between 1989 and 1998 the reported number of commercial aircraft in service increased by about 60 per cent, from 11 253 to 18 139 aircraft. In 1998, 1463 jet aircraft were ordered, compared with 1309 in 1997, and 929 were delivered, compared with 674 aircraft in 1997. In 1998, the total scheduled traffic carried by airlines of the 185 Contracting States of ICAO amounted to a total of about 1462 million passengers and about 26 million tonnes of freight. These figures[1] are reflective of the rapidly increasing frequency of aircraft movements at airports, calling for drastic management of airport capacity. To cope with the demand, airlines are forming strategic alliances by utilizing such commercial tools as franchising, leasing and interchange of aircraft.

Competent airline managers now need to know that, in the foreseeable future, there will be a few mega-carriers operating in America, Europe, Asia and the Pacific Rim and that these carriers will probably be composites of strong strategic alliances between powerful airlines and powerful regional states. They will be well equipped to offer the quality of service and punctuality that the glamour of air travel requires. To compete with these carriers for a fair share of the market, a smaller airline would have to offer a comparable product. This book addresses some new issues that the aviation industry may find topical and applicable to modern aviation management in the new millennium.

RUWANTISSA ABEYRATNE

Note

1 The above figures were extracted from *The Annual Report of the Council* (1998) Montreal: ICAO, Doc. 9732, p.6.

PART I
COMMERCIAL ISSUES

1 Strategic Alliances of Airlines

Introduction

Today's commercial competition has transcended the past era, where dominant markets protected their established market shares. Most mega commercial activity was then the purview of governmental control under instrumentalities of state which were mostly cumbersome bureaucracies at best. Perhaps the best analogy is the biggest commercial market – the United States – which had, until recently, extensively regulated larger commercial activities pertaining to energy, transport and telecommunications.

Happily, over the past decade, commercial air carriers have broken the shackles of rigid regulation to form strategic alliances among themselves. These alliances have been formed in the realization that the performance of an airline can be affected by two factors: the average performance of all competitors in the airline industry, and whether the airline concerned is a superior or inferior performer in the industry. Michael Porter[1] encapsulates these two factors in the single premise that any business achieves superior profitability in its industry by attaining either higher prices or lower costs than rivals. Curiously, in the airline industry, it is the latter – lower costs – which has been the cornerstone of strategic alliances.

The reason for airlines banding together is to share an otherwise wasted market which is still regulated by bilateral governmental negotiations. This unfortunate state of affairs has been brought about by a lacuna in the Convention of International Civil Aviation[2] (Chicago Convention) which leaves the absolute prerogative of allowing air carriers to carry passengers, cargo and mail into and out of their territories to states.[3] This privilege has encouraged the protective instincts of states to ensure that their national carriers obtain optimum market share 'belonging' to them, based on a now antiquated belief that all passengers, cargo and mail destined for a particular state, or leaving that state, are the birthright of the national carrier of

that state. This stifling phenomenon has encouraged airlines to think more strategically over the past two decades, resulting in the pursuit of improved operational effectiveness in their activities.

The seminal response of most strategic airlines to the interference of governments was to 'share' each other's resources, including air traffic rights, thus gaining access to what was disallowed under bilateral governmental agreement. Recently, airlines have become more aware than ever that they are becoming an increasingly capital-intensive industry and have a compelling need to reduce costs in order to survive. The end result has been an array of commercial arrangements between airlines, from statements of common interests to block space arrangements, code sharing and coordination of frequent flier programmes, to name just a few.[4]

This chapter will examine the semantics of strategic airline alliances and the manner in which such alliances overcome bureaucratic obstacles to gain access to open competition.

The Philosophy of Strategic Alliances

Arguably, the most spectacular strategic airline alliance so far is the 'Star' Alliance, which was launched in 1997 by Lufthansa, SAS, United Airlines, Thai Airways International and Air Canada. Brazilian carrier Varig joined later, and it was expected that Ansett Australia and Air New Zealand would join the alliance in 1999. Recently, Singapore Airlines signed a commercial agreement with SAS – one of the 'Star' Alliance members – which will bring Singapore Airlines inextricably close to the alliance itself.[5] It is evident that the carriers of North America, Europe and the Asia Pacific regions, which form the 'Star' Alliance, have skilfully manoeuvred their dominance of the regions they represent. The direction in which the alliance is heading, with the possible future membership of Japan's All Nippon Airways (ANA), is incontrovertibly to assert its presence in the burgeoning Asia Pacific market, in particular the Pacific Region.

The underlying philosophy of the airline alliances, typified by the 'Star' Alliance, is not so much an emphasis on the more effective use of resources such as labour, capital and national resources (which are inevitably important factors) but rather an overall reliance on the strategy of location, where the sharing of locations represented by the various airlines has enabled them to produce their goods and services in a consistent manner, thus achieving the status equivalent to a cartel, while still retaining their individual identities.

Airlines have developed both a corporate strategy and a competition strategy to cope with competition. Both these strategies are becoming increasingly complementary rather than being mutually

exclusive, which they were at the inception of airline competition 50 years ago. As airlines began to compete with each other across the borders, they acquired the ability to locate themselves overseas, creating a compelling need for commercial airlines to be fully acquainted with locational strategy and competitive advantages of various locations. Very early in the game, giants such as PANAM and TWA began to realize that even the strongest company with an established position in the airline industry, unthreatened by competition from new entrants or smaller airlines, would start losing business if they faced a better or lower cost product. The threat of new entrants, the bargaining power of supplies and customers and the superior quality or low cost of substitute products were arguably the underlying reasons for established airlines to begin experiencing a downturn in the 1960s, which was exacerbated through the 1970s and 1980s. These threats could not be effectively circumvented or overcome by the established carriers, partly because of the sustained circumscription of market entry imposed by Article 6 of the Chicago Convention.

The genesis of airline alliances therefore was a contrived symbiosis or coexistence between the new entrants or new competitors – which had the clout of resources but not the dimensions of a larger carrier – and the larger carrier itself which had an established product to offer. Together, these two types of carriers could eradicate such obstacles as product differentiation (which was a distinct disadvantage to carriers which did not have an established brand), capital requirements (which again was a disadvantage faced by a smaller carrier), economies of scale (which forced a smaller carrier to compete on a large scale) and government policy (which affected both types of carriers, particularly the larger carrier which had the resources to operate air services but not the market access to a given region).

Another type of commercial alliance is the 'mega' alliance referred to earlier in analogy typified by the 'Star' Alliance. The precursor to this type of alliance could have been the modest 'pool agreement' between two carriers operating third and fourth freedom traffic; that is, traffic purely originating and ending in each other's territories. The pool agreement was written into a bilateral air services agreement between two states in order to ensure equal enjoyment of market share between their carriers in the route between their states' territories. This notion gave rise to an extension of the principle of pooling, which was to share locational traffic on a fifth freedom; that is, traffic which is picked up at intermediate points or points beyond on services between two states, and, more importantly, sixth freedom: traffic to which a carrier had no right but which it could operate under the air traffic rights of another carrier, through a commercial arrangement such as a code share agreement signed by and between the carriers.

Some Types of Strategic Alliances

Airline alliances, particularly code-sharing agreements, add destinations to a route network and offer more frequencies of service to customers. With such arrangements, an airline can add on flights using its code sharing partner's flight entitlement and operate to additional destinations without adding any resources. Of course, such an arrangement would create a duopoly, depriving customers of the benefit of competition, pricing and so on if the airlines concerned were in competition on a given route. Code sharing not only affects passenger traffic, but influences the consolidation of cargo carriage as well, as was seen in the Swissair–Delta Airlines cargo alliance across the Atlantic.[6]

In Europe, the 'open skies' concept, introduced by the European Union, as legislator, in 1977 was meant to open competition between European carriers in Europe in order to offer competitive airline services to customers. However, this has not had the desired effect, owing largely to airlines forming alliances under the umbrella of the open skies legislation. In particular, the four alliances headed by British Airways, Lufthansa, KLM and Swissair have vigorously entered into alliances with smaller carriers under franchising agreements in order to gain access to markets they have not obtained in their air services agreements.

There are approximately 1200 scheduled air carriers in the world. It is estimated that there are approximately 10 000 aircraft in the air at any given moment. Excluding China and the countries of the former Soviet Union, approximately 380 000 civil aircraft are registered in ICAO states. Of these, 45 000 are used by commercial operators.[7] Forecasts of the number of passengers carried on scheduled services in nine intercontinental route groups show the trans-Pacific and Europe–Asia markets as the fastest growing, at 8 per cent and 7.5 per cent per annum, respectively, for the forecast period through to the year 2003.[8] International scheduled passenger traffic is forecast to grow at an average rate of 6.5 per cent per annum compared with 4 per cent per annum for domestic traffic.[9] These rapidly evolving trends will no doubt be accommodated by equally rapidly developing technology and economic norms of the airline industry. Incontrovertibly, code sharing and computer reservation systems (CRS) are at the helm of this process.

Although, technically, code sharing and functions of computer reservations systems are two different activities of the air transport industry, they become inextricably linked to each other when two air carriers who share each other's codes may wish to have their shared flights displayed in each of their CRS. The placement of a code-shared flight in one CRS of a code-sharing partner differently from the

system of the other would make no commercial sense either to the air carrier concerned or to the consumer. Thus multiple listings of the same flight may appear in CRS and airline schedules, often misleading the potential passenger, but certainly drawing an identifiable link between the two systems. Both activities, therefore, which have undergone a significant exponential growth over the past few years, warrant a close analysis in view of their inextricable link to each other and joint quest for commercial credibility and consistency. An inexorable implication of this symbiosis is the impact the two activities may bring to bear on the principles of the law of contract. This chapter will also discuss code sharing and CRS against the backdrop of contractual liability principles of air carriers and CRS users obtaining at international law and common law jurisdictions as they relate to the carriage by air of persons.

Code Sharing

Code sharing between two airlines is essentially two different airlines posing as one, sharing or rotating aircraft crew and responsibility.[10] It has been called a little more than a glorified inter-line agreement which occurs when one airline operates a flight but both its and another carrier's codes are used.[11] Thus, for example, a passenger who contracts with airline A to travel from Canada to Australia may find himself in the same aircraft with a passenger who contracted with airline B for the same journey.

The United States Department of Transportation (DoT) uses a somewhat technical definition for code sharing which it calls 'a common airline industry marketing practice where, by mutual agreement between cooperating carriers, at least one of the airline designator codes used on a flight is different from that of the airline operating the flight'.[12] The DoT then classifies code sharing under this definitive structure into two types: the first being the typical international airline operation where two or more airlines each use their own designator codes on the same aircraft operation; and, the second enunciating the domestic code shared flight where the code on the passenger's ticket is not that of the operator of the flight, but where the operator does not offer the service in his own name. DoT goes on to bifurcate international code sharing, where, in the first category, only one segment of the journey – which usually involves a connection – operates under two different codes, one used by an airline for its local traffic, and the other used by its partner for the entire journey, and in the second, the entire journey is advertised and displayed under the codes of the two airlines which share the flight concerned.[13]

The marketing benefits of code sharing have been identified as the ability of airlines to coordinate schedules, transfer baggage easily,

maintain common marketing activity by the sharing of air carriers, use through fares, use single check-ins, share airport lounges, share frequent flier programmes, and agree upon exactly which airline is legally responsible for the passenger's whole journey by air. American Airlines, one of the early proponents and participants in the code-sharing concept, adds the safeguarding of traffic rights to this list, where it is claimed that a stronger carrier in the market could be forced to code share with a weaker national carrier, thus spreading commercial benefits on a given route among two carriers equitably.

One of the most scathing attacks on code sharing is that it seeks to create the illusion that inter-line connections between code-sharing partners are the equivalent of on-line connections, which is not so. It is claimed that this alleged illusion is successfully carried out because passengers prefer on-line to inter-line connections by a ratio of approximately four to one, fooling them to believing that a code-share is an on-line service. Robert Crandall, as Chairman, American Airlines, was of the view that allowing foreign carriers to deceive consumers into believing that a domestic code-shared service was really an extension of an international service of a foreign carrier effectively precluding genuine carriers from building strong, dependable on-line services.[14] Crandall also believed that code sharing was an anti-consumer marketing activity in that it causes multiple listings of the same flights in computer reservations systems and printed multi-airline schedules, thus debasing the quality of the information available to consumers.[15]

Code sharing really gathered momentum with the introduction of computer reservations systems. Major US airlines found it attractive to engage in code sharing in relation to CRS as it provided them with a better exposure on the CRS screen. Although a code-shared flight may not yet appear on a computer screen in its pristine form to be identified as such, code-shared flights now appear in CRS as on-line connections and are thus given priority over inter-line connections, giving them an overall higher profile in the CRS and making them more likely prospects for booking by a travel agent.[16] These code-shared flights which appear as 'connections with aircraft change' on the screen would enable such flights to appear at least four times on the same screen. Some countries therefore view code shared agreements as efficacious marketing tools and dissociate the concept entirely from the issue of traffic rights.

In January 1995, United States Secretary of State for Transportation, Fedrico Pena announced the International Aviation Policy Statement of the United States which primarily endorsed code sharing as a cost-efficient way for carriers to enter new markets and expand their systems.[17] Earlier, in December 1994, the US Department of Transport had released its report on international code sharing which

it had commissioned from Gellman Research Associates (GRA).[18] Secretary of State Fedrico Pena referred to the study as follows:

> This study fully supports the department's international aviation policy statement. It demonstrates that the movement towards globalization and transnational alliances through code sharing and liberalized bilateral arrangements delivers benefits not only for United States consumers but for the United States airline industry as well.[19]

One of the issues that emerged from the study was that the critical factor in code sharing is not whether it is good or bad, but whether it has certain undesirable effects that need to be addressed by policy makers. Based on an econometric consumer choice model that was applied to certain code-sharing agreements, as against non-code shared flights, the study concludes that the negative impact on consumers as a result of potential deception is inconsequential as any impact of such misleading practices would be cushioned by existing DoT safety nets. The GRA study's findings were also consistent with the overall DoT perception that all international traffic will ultimately be restructured into long haul services linking intercontinental hubs, with intraregional spokes feeding traffic, leading to the proliferation of airlines and the expansion of code sharing.[20]

The study concluded that benefits to consumers, estimated at $37.4 million, were minuscule compared to approximately $10 billion that passengers spend each year on transatlantic tickets. Even if one were to assume, as the study suggests, that the number should be doubled, a gain of around $75 million was comparatively inconsequential. Another conclusion was that consumer benefits of code sharing were not so much quantifiable in fiscal terms but rather in terms of higher convenience, higher quality of airline service and time savings generated through the faster elapsed time offered by code-shared flights.

Computer Reservation Systems (CRS)

Airline computer reservation systems are one of the most rapidly developing industries today. This development is being driven in part by the enormous strides made by industrial technology. Traditionally, airlines have been at the helm of computer usage and their sustained use goes back 30 years. In the 1960s, the airlines inaugurated high speed real-time reservations systems, and today, these systems use some of the most sophisticated computer software in the world. CRS, which began as a simple means of placing an order for a seat on a plane, has now developed to add various new dimensions to the carriage of persons and goods from one point to

another by air, such as hotel reservations, car rentals, authorization of credit facilities to customers and theatre reservations, all of which cumulatively make CRS an effective marketing tool.

Inevitably, from progress and development emerges the immutable fact that, while some may benefit from the whole process of development, others may feel left behind, even to the extent of being run out of business. One of the corollaries to the phenomenal growth and development of the CRS process is the plight of airlines and travel agents who do not have the ability to participate actively in sophisticated and widespread CRS programmes.

A travel agent usually gains access to a CRS through a terminal consisting of a keyboard and a visual display unit. The first step is usually to enter the key data – such as the departure and arrival points relating to an air journey. The system then responds by reflecting on the screen various flight options called upon by the system according to the requested data and time of travel and adjusted according to the priority criteria used in the reservations system concerned. Although CRS have the capacity to list all possible flight options between city pairs concerned, they usually display merely a small number of options, necessitating a 'search' for others. In view of pressures brought upon time and other resource constraints, the tendency is usually to settle for what is displayed on the screen. Needless to say, this process effectively precludes those options offered by airlines enjoying less priority than others from being made known to the prospective airline customer.[21]

The importance of code sharing in this process becomes all the more significant, since a flight jointly served by two airlines who share each other's codes would have the leverage of both those airlines in the CRS being displayed more prominently than a flight which is served by a single carrier. In other words, it is claimed that code sharing by airlines may *ipso facto* aggravate any imbalance that may already exist in the CRS in favour of those airlines which are prioritized in the systems for other commercial reasons. Barry Humphreys observes:

> The exclusion of an airline's services or the failure to show its correct fares or seat availability status can have a disastrous effect on its ability to compete effectively, and numerous cases have been documented to show that these are not merely hypothetical examples of anti-competitive behaviour.[22]

Notes

1 Michael E. Porter (1996), *On Competition*, Harvard Business Review Series: U.S.A., p.4.

2 Convention on International Civil Aviation, signed at Chicago on 7 December 1944, hereafter referred to in this chapter as the Chicago Convention. See ICAO, Doc. 7300/7, 7th edn, 1997.
3 Article 6 of the Chicago Convention provides: 'No scheduled international air service may be operated over or into the territory of a Contracting State, except with the special permission or other authorization of that State, or in accordance with the terms of such permission or authorization.'
4 See Russel Miller (1998), 'International Airline Alliances – A Review of Competition Law Aspects', *Air & Space Law*, XXIII(3), p.125.
5 *ITA Press*, 16–31 October 1998, p.4.
6 Robert Koenig (1998), 'Swissair, Delta Raise Trans Atlantic Cargo Status', *Journal of Commerce*, 2 June, 8A.
7 'Outlook for Air Transport to the Year 2003', *ICAO Circular 252-AT/103* (1995), ch. 2, 5.
8 Ibid., ch. 1, 2.
9 Ibid., ch. 5, 37.
10 'Code Sharing: If It's Tuesday, This Must be Aeroflot', *Airways*, January/February 1995, 19. See also 'Is Airline's Gain Consumer's Loss?', *The Avmark Aviation Economist*, II(8), October 1994, 13.
11 'Coded Warnings', *Airline Business*, January 1995, 26.
12 *The Avmark Aviation Economist*, October 1994, 16.
13 Ibid.
14 See Robert Crandall, 'Chicago's Legacy, Barriers to Multilateral Liberalization', *Viewpoint*, 2(1), 12. Crandall cites the example of the British Airways–US Air code sharing agreement which allegedly allows British Airways access to nearly six times as many world city-pair markets as are available to American Airlines. He further claims that, since British Airways now has the ability to gather passengers from almost anywhere in the United States and fly them across the Atlantic, and since it has created pseudo-hubs in the United States to connect with its real hub at London Heathrow, neither the British government not British Airways would have any incentive to let American Airlines or any other US carrier compete with British Airways for any substantial portion of the traffic flowing across Heathrow from countries around the world to and from the United States.
15 Ibid.
16 See Jan Ernest C. de Groot (1994), Code Sharing – U.S Policies and Lessons for Europe', *Air and Space Law*, XIX(2) April, 64.
17 'Coded Warnings', *Airline Business*, January 1995, 26.
18 The objectives of the study were to develop a methodology to assess the effects of code sharing on the level and distribution of traffic among carriers, with the capability to measure the effect of future code-sharing agreements; to examine the effects of code sharing on the costs and profitability of airlines; to assess the effects of code sharing on consumers of airline services; and to project the future use and impact of code sharing over the next 20 years.
19 'GRA Report Sanctifies DoT Policy', *The Avmark Aviation Economist*, December 1994, (2).
20 Ibid.
21 For a more detailed analysis of this problem, see Chris Lyle (1988), 'Computer Age Vulnerability in the International Airline Industry', *Journal of Air Law and Commerce*, 54, 161–178. See also Vladimir D. Zubkov (1987), 'The Development of Computer Reservation Systems: The ICAO Viewpoint', *ITA Magazine*, 42, March/April, 3–7.
22 Barry Humphreys (1989), 'Different Approaches to a Common Problem', *ITA Magazine*, 53, January/February, 9.

2 Aircraft Leasing

Introduction

Aircraft leasing became a strategic commercial manoeuvre of airlines only in the past 20 years. Of these, the first decade – the 1980s – saw a boom in commercial aviation and therefore a corresponding upsurge in aircraft manufacture, and the 1990s saw a downturn of this trend, contributed to in part by vacillations of the world economy which brought to bear regional economic crises such as the Asian slump in the late 1990s.

The downturn of the 1990s and the ensuing money market crisis has underscored the value of juggling the most expensive single asset of the aviation industry: the aircraft. Aircraft financiers are quick to offer flexible investment options to airlines to obviate the burden of outright purchase of aircraft. Apart from traditional loans, two of the most effective financial tools now available to the airline industry for the procurement of aircraft are finance leasing and operational leasing.[1] These leasing options are particularly beneficial to small airlines which are at high risk because of their limited asset bases.

Leasing of aircraft has effectively extended the operational life of aircraft to encompass second and third operators. The magnitude of this financial option is well borne out by the fact that at least 25 per cent of aircraft being used in the airline industry are leased.[2] Essentially, the three most basic benefits bestowed on the lessor and lessee by a lease are reduction and spreading of risk of the asset, attendant tax benefits and flexibility of operation. In terms of the nature of operation of a lease, the leasing process may take the form either of a wet lease – a lease where the air crew of the lessor is an integral part of the lease agreement – or of a dry lease, where the lessor transfers possession of the aircraft without crew.

Nature of Leasing

Very simplistically put, leasing is the transfer of possession without ownership. Legally speaking, however, the definition becomes somewhat longer, in that a lease at law is essentially a commercial arrangement whereby a lessor (or equipment owner) conveys to the lessee (or operator of the equipment) for valuable consideration in the form of rentals, over a period of time specified in the lease agreement, the right to use the equipment.[3] The lessee is legally obligated to return to the lessor the equipment he leases at the expiration of the term of the lease,[4] in reasonably good order, leaving a margin for wear and tear of normal usage.[5]

Donald Bunker, in his most informative treatise[6] on aerospace financing, cites the 1960s paradigm of IBM and XEROX leases which typifies the principles of the modern lease. Both companies utilized the lease of their equipment as a tool of marketing strategy which was calculated to maximize their profits over a standard sale, by amortizing the capital costs of the equipment and earning a profit over the sustenance of the lease period. Over and above this fundamental benefit, a lease effectively demarcates the market pricing between new and used equipment, thus allowing the resale market to flourish on its own by removing obsolete equipment from the marketplace. The blend of new and used equipment pricing policies balances an enterprise's cash flow and asset base while ensuring a more orderly growth of reported profits.[7] To the consumer, or operator, a lease offers maximum flexibility for selective use of a product, which, in lay terms, would be the equivalent of walking into a baker's shop and being able to buy a slice of pie to allay one's hunger, without having to buy the whole pie. In the context of aircraft leasing, this financial principle is of paramount importance, since leased aircraft can meet seasonal demand for additional capacity without the operator having to incur the capital outlay involved in the outright purchase of an aircraft. Additionally, leased aircraft can be selected to fit into routes and meet specific measurements and requirements of certain routes for which an operator obtains air traffic rights but does not own the equipment to enjoy the rights. This is particularly applicable in the case of smaller air carriers who have traffic rights to operate on certain routes but do not have the appropriate equipment for the purpose.

The registration of the airline is a paramount legal consideration which has to be addressed when an airline uses leased aircraft. The basic postulate of law which currently applies to the legal identity of aircraft lies in Article 17 of the Chicago Convention,[8] which states that aircraft have the nationality of the state in which they are registered. The Convention further provides that an aircraft cannot be

validly registered in more than one state, but its registration may be changed from one state to another.[9] With regard to the registration or transfer of registration of aircraft, the Convention provides that such has to accord with the applicable national laws and regulations of the states concerned.[10]

The most fundamental characteristic of an aircraft at international law is its nationality. Both the Paris Convention of 1919[11] and the Chicago Convention provide that the nationality of an aircraft is governed by the state in which such aircraft is registered. The Tokyo Convention on Offences Committed on Board Aircraft (1963)[12] provides that the state of registration has jurisdiction over offences and acts committed on board.[13] Therefore it is reasonable to conclude that the national status of an aircraft would depend on the fact of its registration and to this extent is not dissimilar to the maritime law concept of nationality of ships. The most explicit pronouncement on nationality of vessels was given by the International Court of Justice in the famous *Nottebohm* case,[14] where the court held:

> The character thus recognized on the international level as pertaining to nationality is in no way inconsistent with the fact that international law leaves it to each State to lay down the rules governing the grant of its own nationality. The reason for this is that the diversity of demographic conditions has thus far made it impossible for any general agreement to be reached on the rules relating to nationality, although the latter by its very nature affects international relations. It has been considered that the best way of making such rules accord with the varying demographic conditions in different countries is to leave the fixing of such rules to the competence of each State. On the other hand, a State cannot claim that the rules it has thus laid down are entitled to recognition by another State unless it has acted in conformity with this general aim of making the legal bond of nationality accord with the individual's genuine connection with the State which assumes the defence of its citizens by means of protection as against other states.
>
> … According to the practice of states, to arbitral and judicial decisions and to the opinions of writers, nationality is a legal bond having as its basis a social fact of attachment, a genuine connection of existence, interests and sentiments, together with the existence of reciprocal rights and duties. It may be said to constitute the juridical expression of the fact that the individual upon whom it is conferred, either directly by the law or as the result of an act of the authorities, is in fact more closely connected with the population of the State conferring nationality than with that of any other State. Conferred by a State, it only entitles that state to exercise protection vis-à-vis another State, if it constitutes a translation into juridical terms of the individual's connection with the State which has made him its national.[15]

In the particular instance of aircraft, the concept of registration and nationality has evolved with changing conditions of civil aeronautical activities relating to the development of airline contracts concerning the use of aircraft which brought in fiscal advantages to airlines. Specific contracts, such as leases, charters and interchange of aircraft, are now assisting air carriers to obviate the need to find money to buy new aircraft. More carriers are now entering into short-term lease agreements to keep their operations afloat and such dry or wet lease agreements necessitate a closer look at the requirements of registration and nationality as dictated to by the Chicago Convention.

In order to accord with commercial exigencies relating to lease and charters in the air transport industry, The International Civil Aviation Organization (ICAO)[16] has introduced Article 83 *bis* to the Chicago Convention, which provides inter alia that, when an aircraft registered in a contracting state is operated pursuant to a contract for the lease, charter or interchange of the aircraft by an operator who has his principal place of business or if he has no such place of business, his principal residence, in another state, the state of registry of the aircraft concerned may, by agreement with such state, transfer all or part of its duties as state of registry to such other state.[17] Technically, this means that a state may lease aircraft registered in another state, and, by mutual agreement, take over responsibilities of the state of registration in respect of that aircraft. Under these circumstances, it may be reasonable to assume that, in the event that an aircraft leased by a state performs functions of a military nature for the lessee state, such state could be considered the state of registration if an agreement to that effect had been put into effect between the lessor and lessee.

Article 83 *bis* of the Convention was timely, in that it was adopted at a time when trade barriers were being rapidly obviated and many industries were being globalized. Instances of as many as nine multinational partners in one industry are not uncommon in today's commercial world. In particular, commercial trends in the United States and United Kingdom show new emergent large airlines with the participation of more than one nationality.

Although the current bilateral regulatory structure calls for substantial ownership and effective control of airlines by nationals or companies of a designating state – which essentially means that for Country A to designate its airline to operate commercial flights the airline must be substantially owned and effectively controlled by nationals or companies of Country A – this requirement is increasingly becoming impracticable to fulfil in various instances. In recognition of one such circumstance, the ICAO Assembly, at its 24th Session, adopted Resolution A24-12 which recognized the political reality of regional groupings of states into composite economic enti-

ties, forming a community of interest. The Assembly recognized that such a community of interest, when applicable to groups of developing states, would require their airlines to be identified on a common basis with regard to their substantial ownership and effective control in the context of bilateral regulation of air traffic rights. Therefore the ICAO Assembly urged contracting states by its Resolution to accept the designation of airlines, and allow an airline substantially owned and effectively controlled by one or more developing state or states (or its or their nationals) belonging to a regional economic grouping to exercise the route rights and other air transport rights of any developing state or states within the same grouping under mutually acceptable terms.

There are other instances such as when airlines have multinational ownership (involving ownership of one airline by several states, such as in the instances of Gulf Air, Air Afrique, SAS and LIAT), have ownership registered in one country but are accepted as airlines of another (such as Britannia and Monarch, whose ownership rests in Canada and Switzerland, respectively but which operate air services as designated carriers of the United Kingdom), and are owned by legal persons whose businesses are not domiciled in the country in which the carrier has its place of business (such as Cathay Pacific Airlines).

The 'Third Package' of the European Union, which allows for airlines within the Union to be owned by nationals or companies of any member state, gives further credence to the compelling need to consider the element of designation of airlines outside the purview of the conventional philosophy of 'substantial ownership and effective control' as required by the current bilateral regulatory regime.

In view of the above developments, the dictates of aircraft financing require financiers to be aware of the multitude of possibilities of litigation for ownership and control of aircraft financed by them and also the legal implications of aircraft leasing in the modern context. Donald Bunker states:

> The concept of registration has now developed such that financiers of commercial aircraft for use internationally must be well aware of the effect that the country of registration could have on their rights. The relatively liquid world market in used aircraft makes aircraft financing quite attractive to many investors. However, most prudent financiers like to be assured of being able to obtain possession of their equipment, free and clear of a defaulting debtor's rights and deregistered by the operator's country so that an efficient realization of their security could be achieved.[18]

From the point of view of the airline which leases aircraft and sustains damage to the aircraft and to its passengers, the legal

relationship between lessor and lessee of property would apply in common law jurisdictions. The lessor of the aircraft would usually be covered by his own insurance or by an indemnification agreement between the lessor and lessee. In a typical financial lease agreement of aircraft, the position of the lessor could be that of a lender at common law, and to that extent he would be protected from the mere presumption *ipso facto* that he is liable by virtue of his ownership of the aircraft. However, this is not strictly an inflexible rule and different jurisdictions may impose strict liability in certain situations.[19] There is also the possibility that rules of negligence may apply in certain jurisdictions where an injured party, the lessee, may seek redress from the lessor of the aircraft. Such claims are often prompted by the favourable financial circumstances that lessors are usually in.

The protection of the lessee in instances of damage is usually assured by the liability insurance obtained by the lessee. The lessee could also qualify the indemnity agreement he signs with the lessor that the lessee's liability would be valid and effectual only in instances when the lessor is not negligent or in default of his agreement. The lessee would therefore be protected against such acts as arbitrary seizure of property by the lessor. Other legal measures available to the lessee are his capacity and legal right to insert a clause in the lease agreement that the leased property is accepted by the lessee on condition of warranty as to the quality of the property, and his ability to obtain warranty direct from the manufacturer.

Legal Issues

The formation of a lease contract is like that in any other contract involving the offer of the offeror and acceptance by the offeree. However, unlike the contract of sale, when possession and ownership of the article in issue passes to the offeree, the lease contract passes only possession. In other words, the lessee obtains from the lease contract the rights to use and enjoy the property concerned but is precluded from having the right to alienate (or sell) it. Of course, the lessee is required, in exchange for the above rights, to pay the lessor a periodic rental.

Usually, as in any contractual agreement, the parties to the agreement have to place their signatures on the document of contract to conclude the deal and activate performance of the contract. There are exceptions to this rule, however, which may, albeit unusually, apply to an aircraft lease. An agreement would be enforceable without signature. In the 1988 Australian case of *Empirnall Holdings Pty Ltd* v. *Machon Paull Partners Pty Ltd*,[20] where a building contract required the signature of the client with the architects and the client refused to

sign the contract form, the New South Wales Court of Appeal held that, since the project went through with the knowledge of the client and without his formal objection, the contract was valid. Analogically, if by practice or habit and repute a lease arrangement is sustained by the lessor and lessee, common law courts may presume that the offer by the lessor was accepted by the conduct of the lessee.

There is also the possibility of courts imputing to the parties their intent to implement a contractual agreement if the parties negotiate for some time and start to act as though a deal has been made. In the 1988 case of *Integrated Computer Services Pty Ltd.* v. *Digital Equipment Corporation (Australia) Pty Ltd*,[21] where the parties concerned negotiated for some time and slid into implementing the terms of their negotiation without a formal contractual document, the court said:

> Moreover, in an ongoing relationship, it is not always easy to point to the precise moment when the legal criteria of a contract have been fulfilled. Agreements concerning terms and conditions which might be too uncertain or too illusory to enforce at a particular time in the relationship may by reason of the parties' subsequent conduct become sufficiently specific to give rise to legal rights and duties. In a dynamic commercial relationship new terms will be added or will supersede older terms. It is necessary therefore to look at the whole relationship and not only at what was said and done when the relationship was first formed.

It may well be that a lessee airline may need an aircraft on lease urgently and therefore negotiate with the lessor on terms which, before they are enshrined in a contractual agreement, are put into practice to provide urgent air transport services. In such cases, the *Integrated Computer Services* case[22] may be seen as a persuasive judicial pronouncement. An extension to the principle of performance of a contract without formal agreement lies in the principle of estoppel where, even though a contract is not signed it is considered to be legally binding on the basis of the conduct of the parties whereby one party may be estopped from regarding the contract as voidable on the grounds of lack of formal documentation or signature. For the doctrine of estoppel to operate, the following criteria have to be satisfied: there must be a definite assurance or representation by words or conduct (which can include doing nothing); there must be reasonable detrimental reliance by the other party; and there must be unconscionable conduct by the party estopped.[23]

If the lease is put up for tender by the lessee, the tenderer or prospective lessor may make an offer, to be accepted by the lessee. In such an instance, courts no longer find the tendering process mutually exclusive from the contractual process in that the tendering process is called the 'pre-contractual' process which itself may be governed

by common law principles of contract. The Canadian Supreme Court, in 1981, pronounced that there are two contractual processes which run parallel to each other: the tendering process and the contractual implementation process.[24] Therefore, according to this principle, one cannot argue that the tendering process or period covering tendering negotiations were not covered by enforceable obligations.

Frustration of a lease, or non-performance of the lease contract owing to intervening circumstances such as the outbreak of war, is indeed a realistic circumstance that has to be considered on the subject of aircraft lease. On the question as to what recourse either party has to a lease if, after the execution of a lease agreement for the lease of an aircraft the contract cannot be performed owing to the outbreak of war, both parties to the agreement may find the contract frustrated at least temporarily. In such an instance, the court invested with the case would inquire as to whether the lease could have been carried through on a long-term basis, and the 1945 *Cricklewood*[25] principle, established by the House of Lords – that a temporary event such as the outbreak of war would not strike at the root of a lease transaction if such transaction could have been executed in the long term – would apply. However, it has since been established in certain circumstances that the doctrine of frustration can affect a lease, particularly before the lessee takes possession of the leased property.[26]

The lessor usually opts for the law of his domicile as choice of law in the event of a dispute or adjudication, or even for the administration of the lease. Often the lessee negotiates this issue by suggesting another form, particularly if the lessee's choice does not adversely affect the lessor's rights. The lessee gains the right to 'quiet use and enjoyment' of the property through a fundamental covenant of aircraft lease, which essentially guarantees the lessee uninterrupted and untrammelled use of the leased aircraft. Margo[27] points out that in some instances a lessor may attempt to preserve for himself residual rights with regard to uninterrupted and untrammelled use, by hedging the absolute covenant. This hedging process could take place particularly in instances where the leased property comes with a lien or rights of a head lessor or financier.[28]

One of the critical factors of an aircraft lease, particularly from the perspective of the lessee, is the date of delivery of the aircraft. This is yet another area where lessees have to be cautious about exclusionary language in the lease transaction allowing a lessor to have unreasonable flexibility with regard to the delivery date. A security deposit of an advance of rental is usually requested by the lessor and this condition is usually incorporated in the memorandum of understanding or letter of interest which forms the base document of the lease transaction. The memorandum, which is the precursor to a formal agreement, usually covers the fundamental terms of the agree-

ment and records the fact that the parties will, at a future date, enter into a formal lease agreement. Obviously, the lessee will exercise caution as to the terms of the contract, which could be heavily weighted in favour of the lessor in the usual instance of the letter of intent and formal agreement being drafted by the lessor's lawyers.

Maintenance of the leased aircraft is another issue which has to be addressed by the lessee with caution, particularly in the event of an operational lease. The lessor, in this instance, would insist on stringent maintenance terms, at least in accordance with the lessee's approved maintenance standards, prudent airline industry practice and pertinent manufacturer's manuals. The lessor is also usually cautious in avoiding the possibility of the lessee surrendering possession of the leased aircraft during the time of the lease to a third party for maintenance purposes.

The lessee usually has options such as subleasing, particularly when it becomes necessary to be consistent with the demand faced by the lessee for air transport, and pooling of aircraft components with other carriers. The interchange of aircraft components within the lessee's aircraft fleet is another option that the lessee may wish to negotiate.

Regulatory Issues

Leasing of aircraft has far-reaching consequences in the regulatory field in that several provisions of the Chicago Convention affect the commercial activity of leasing. As discussed earlier, Article 17 of the Convention provides that aircraft have the nationality of the state in which they are registered, which, prima facie, means that a leased aircraft would be considered as bearing the nationality of the state in which it is registered. There is no dual registration under the Convention as per Article 18. Furthermore, each contracting state is obligated by Article 12 to ensure that every aircraft entered in its register complies with the laws and regulations in force therein, wherever the aircraft may be at any given time. There are three other relevant provisions: Articles 30, 31 and 32(a) of the Convention which prescribe that the state of registry shall be responsible for the certification of aircraft's airworthiness, licensing of radios as well as the licensing of operating crew. Such certificates are required to be issued and validated according to the relevant Annexes to the Convention: Annex 1 (Personnel Licensing) and Annex 8 (Airworthiness of Aircraft). In addition, Annex 6 pertains to the operation of aircraft which devolves the responsibility of compliance with the rules of the annex on the state of the operator.

A later development in the annals of the Chicago Convention is the formal adoption by ICAO Contracting States of Article 83 *bis* on

20 June 1997 where the 98th instrument of ratification of the article was received by ICAO. Article 83 *bis*, which was approved by the ICAO Assembly on 6 October 1980 at its 23rd Assembly, essentially provides that, notwithstanding the abovementioned provisions of the Convention, when an aircraft registered in a contracting state is operated in pursuance of an agreement for the lease, charter or interchange of the aircraft or any similar arrangement by an operator who has his principal place or business, of if he has no principal place of business, his permanent residence, in another contracting state, the state of registry may, by agreement with such other states, transfer to it all or part of its functions and duties as state of registry and the state of registry shall be relieved of responsibility in respect of the functions and duties so transferred.[29]

According to guidelines of the ICAO Secretariat[30] on the application of Article 83 *bis*, states should not enter into a transfer agreement if the state of the operator concerned is not capable of adequately performing the duties and functions which are envisaged for transfer. The aircraft concerned should be clearly identified in the agreement by including reference to the aircraft type, registration and serial numbers. Any type of commercial arrangement for cross-border lease, charter or interchange of aircraft, or any similar arrangement, may give rise to a transfer agreement.

The ICAO Secretariat guidelines also provide that wet-leased aircraft may be subject to a transfer agreement between the state of registry (normally the state of the lessor) and the state of the lessee or sublessee, provided that they are operated under the air operator certificate (AOC) of the lessee or, in the case of a sublease, under the AOC of the sublessee. The issuance of an AOC, as required by Annex 6 for (international) commercial operations, is not a precondition for such a transfer agreement, whose object may be general aviation aircraft as well.

It is also recommended that the duration of the agreement on the transfer should not exceed the period covered by the corresponding commercial arrangement (for example, the lease). Accordingly, the period of validity of the transfer should be mentioned in the agreement, taking into consideration that the registration of the aircraft concerned will not be changed. The level of authority for signing transfer agreements should be equivalent to that required for administrative arrangements between aeronautical authorities.

The ICAO guidelines note that, pursuant to Article 83, as referred to in Article 83 *bis*, paragraph (b), the 'Rules for Registration with ICAO of Aeronautical Agreements and Arrangements' (Doc. 6685) apply to any agreement or arrangement relating to international civil aviation. Implementation of Article 83 *bis* can be made through agreements between civil aviation authorities, usually signed at the level

of Director General, that is, which do not require diplomatic credentials for signature, nor do they require ratification.

Any transfer agreement signed between states parties to Article 83 *bis* will be binding upon the other states parties thereto, on condition that it has been formally registered with the Council of ICAO and made public in accordance with Article 83 of the Chicago Convention, or that any third state concerned has been officially advised by way of direct notification, normally by the state of the operator. Consequently, the state of registry shall be relieved of responsibility (and, where applicable, of liability) in respect of the functions and duties duly transferred to the state of the operator, and the latter shall comply with them in accordance with its own laws and regulations.

States are required to ensure that, as state of registry, their legislation enables them to divest themselves of the functions and duties which are the object of a transfer agreement. Furthermore, as state of the operator, states should ensure that their legislation will apply to foreign-registered aircraft subject to a transfer agreement. States which have ratified Article 83 *bis* should ensure that, in order to be consistent with the provisions of Article 33 of the Convention, their legislation recognizes the validity of certificates of airworthiness, as well as of radio licences and crew licences, issued or validated by the state of the operator in accordance with Article 83 *bis*.

Furthermore, states which ratify Article 83 *bis* should ensure that the information they have received concerning the existence of transfer agreements relating to aircraft operating to/from their territory is promptly relayed to the authorities involved in inspection. For the purpose of identifying the responsible states during the verification process, a certified true copy of the transfer agreement should be carried on board the aircraft at all times while the transfer agreement is in force.[31]

In the instance of an aircraft under an Article 83 *bis* agreement entering the airspace of contracting states which are not parties to the provision, or which are parties but have not been duly advised about a transfer agreement in accordance with this provision, the certificates and licences on board the aircraft should be issued or rendered valid by the state of registry as the latter would in this case remain fully responsible in regard to Articles 30, 31 and 32(a) of the Convention despite the transfer agreement with the state of the operator.

The European Civil Aviation Conference (ECAC) in July 1997, issued its policies and practices of states on aircraft leasing.[32] According to these policies, it is recommended that, before granting approval for a lease, authorities should obtain the following information:

- type of lease,
- names of the parties to the agreement,
- start date and duration of lease,
- number and type of aircraft, registration mark(s) and country of registration, and noise certificate(s) where appropriate,
- evidence of passenger and third party insurance,
- name of air carrier under whose AOC the aircraft will be operated and maintained,
- name of air carrier with commercial control of the aircraft.

ECAC has recommended that member states may also require additional information, for example concerning the reason for the lease and the planned operations, to the extent that such information is necessary to ensure compliance with their national rules and international obligations.

On the subject of transfer of functions and duties in a leasing situation, the ECAC recommendation is that, in the case of a dry lease, all or part of the functions and duties in respect of the leased aircraft under Articles 12, 30, 31 and 32(a) of the Chicago Convention should normally be transferred to the authorities of the lessee in accordance with Article 83 *bis*. For this purpose it is recommended that all member states ratify this Article as soon as possible to enable it to enter into force.

In the case of a wet lease the ECAC recommendations are as follows.

1 Before granting approval to an air carrier to lease in an aircraft, an aeronautical authority shall be satisfied, if necessary by means of an audit, that the lessor meets safety standards equivalent to those which its own airlines are required to meet under their AOC.
2 Furthermore, an air carrier shall only be permitted to wet lease in an aircraft of a type not included in its own AOC if the authority considers that this will not affect the maintenance of safety standards equivalent to those which the lessee is required to meet under its own AOC.
3 A lessor may not fulfil its obligations towards the lessee with capacity wet leased in from a third carrier unless this has been approved by the aeronautical authority of the lessee.
4 Approval for the use of wet-leased aircraft should not be given for an unlimited period of time.
5 The information listed in paragraph 2 of the ECAC regulation should also be obtained before approval is granted for short notice leases. However, alternative arrangements for the prior approval of such leases may be implemented by the appropriate

aeronautical authorities. Such alternative arrangements might include, for example, the establishment of a list of air carriers approved by its national aeronautical authorities from whom an air carrier may lease an aircraft at short notice to meet an unforeseen need for a short period.

6 The use of wet-leased aircraft should not be used as a means to circumvent applicable laws, regulations or international agreements.

7 Aeronautical authorities should respond promptly to requests from their counterparts in other member states for information about leases.

8 Consumers should be informed, as soon as practicable and in any event prior to boarding, of the actual operator if a flight is to be operated with a wet-leased aircraft.

9 Member states may also, for safety and/or economic reasons, and where this is compatible with national and international regulations, choose to ensure that air carriers are not excessively dependent on wet-leased aircraft registered in another state.

ECAC urges member states to cooperate in the provision of information concerning leases, in particular in connection with the ECAC Action Programme for the Safety Assessment of Foreign Aircraft (SAFA).

Technically, Article 83 *bis* is calculated to tighten and ensure the more efficient operation of aircraft in terms both of safety and of commercial expediency by attaching responsibility to the state of the operator since it is the state of the operator which is immediately concerned with the operation of the aircraft concerned, rather than the state of registry, which may be far away from the actual operational site. However, this transfer of functions and duties does not take effect automatically, but has to be given effect by bilateral accord between the state of registry and state of operation. The transfer shall only have effect upon states which ratify the protocol implementing Article 83 *bis*. The particular transfer of functions and duties must be registered with ICAO.

The words 'any similar arrangement' in Article 83 *bis* widens the scope of commercial activity envisaged from lease, charter or interchange to any other arrangement of a similar character.

Safety Issues

The basic postulate in determining the safety aspects of the use of leased aircraft in international air transport lies on the fact that responsibility for safety should devolve on clear and identified states

parties in the context of the use of leased aircraft. The questions as to which state (state of registry or state of the operator) is responsible for ensuring compliance with applicable safety standards provided by the Chicago Convention and its annexes, and which operator (air carrier or company) is responsible for complying with the relevant international safety standards which have been incorporated into the applicable national laws and regulations, become compelling and relevant.

Although the Chicago Convention devolves responsibility of ensuring compliance with applicable safety standards primarily upon the state of registry of the aircraft, it also assigns responsibility to the state of the operator on certain aspects of a lease agreement. This bifurcation is to take into consideration contingencies where traffic rights are exchanged on a bilateral/regional basis, and national laws and regulations which may be applicable to the registration of aircraft, where, in most cases, operators which are designated or authorized by a state for international commercial service use aircraft registered in that state. In these circumstances, responsibilities with regard to safety on the part of both the state and the operator become eminently clear.

Whether it be a dry or wet lease, safety considerations are equally significant and important. In the case of a dry lease, where the leased aircraft is registered in the state designating or authorizing the lessee operator for international commercial services, essentially the same principles would apply from a safety standpoint as when that operator uses its own aircraft. Accordingly, when an airline takes on a dry lease of an aircraft from another airline domiciled in the same state and uses such aircraft for international air transport, there is no change in the state's safety oversight responsibility, although the responsibility for air carrier compliance rests with the lessee. Where an airline enters into a wet lease of an aircraft with another airline of the same state, the safety responsibilities remain at status quo ante, that is, with the lessee who operates the aircraft, but compliance of other responsibilities such as certification generally remain with the lessor.

Safety problems may also arise where a leased aircraft is registered in a state other than that of the operator who uses the leased aircraft in international commercial services. For this reason, approval of dry and wet leases should clearly stipulate the scope of responsibilities and liabilities of parties with respect to safety standards undertaken by each of them.

The issue of crew competence, or capability, which is a critical factor in aviation safety oversight, arises particularly in instances where a dry-leased aircraft is not registered in the state of the operator. It is noteworthy that, in this regard, Article 32(a) of the Chicago

Convention requires that the pilot of every aircraft and the other members of the operating crew of every aircraft engaged in international navigation shall be provided with certificates of competency and licences issued or rendered valid by the state in which the aircraft is registered. As discussed earlier, the application of Article 83 *bis* and ICAO Secretariat guidelines require an agreement between the two states which sets forth the specific responsibilities to be transferred and the particular aircraft to which they will apply.[33] Any transfer agreement signed between states parties to the protocol relating to Article 83 *bis* legally binds all other other states parties to the protocol, on condition that any such transfer agreement has been formally registered with the Council of ICAO and made public in accordance with Article 83 of the Chicago Convention. This principle would also apply in instances where any third state concerned has been officially advised by way of direct notification, normally by the state of the operator.

An incentive for states in considering whether or not to conclude an agreement under Article 83 *bis* lies in the assurance that the state to which safety responsibilities are to be transferred has the capability of fulfilling its safety oversight responsibilities with respect to the specific aircraft involved. Of a particularly persuasive stature in this regard is the fact that states parties to Article 83 *bis* can also use the results of audits carried out under the ICAO Safety Oversight Audit Programme which are available to states through summary reports.

Notes

1 A finance lease involves the substantial transfer of risks and rewards appurtenant to ownership, from lessor to lessee; and an operational lease keeps such risks and rewards within the lessor's scope of legal status. A finance lease is calculated to amortize the lessor's capital outlay and provide a profit at the end of the lease term with the lease payments received from the lessee. An operational lease does not amortize capital outlay at the end of the term and profits are derived usually after more than one lease term.
2 Maria Wagland (1999), 'A New Lease of Life', *Aerospace International*, March, 22.
3 *Beecham Foods Limited* v. *North Supplies (Edmonton) Ltd.* [1959] 1 WLR 643.
4 *Ballet* v. *Mingay* [1943] 1 KB 281.
5 *Lang* v. *Brown* (1898) 34 NBR 492.
6 Donald H. Bunker (1988), *The Law of Aerospace Finance in Canada*, Institute and Centre of Air and Space Law, McGill, p.22.
7 Ibid.
8 Convention on International Civil Aviation, signed at Chicago, 7 December 1944. See 15 U.N.T.S. 295, ICAO Doc. 7300/7 (7th edn, 1997).
9 Ibid., Article 18.
10 Ibid., Article 19.
11 Convention for the Regulation of Aerial Navigation, Paris 1919, Articles 5–10.

12 Convention on Offences and Certain Other Acts Committed on Board Aircraft, signed at Tokyo on 14 September 1963. See ICAO Doc. 8364.
13 Ibid., Article 3.
14 ICJ Reports (1955), 1.
15 Ibid., at 3.
16 The International Civil Aviation Organization is the specialized agency of the United Nations responsible for the regulation of international civil aviation. ICAO has 185 member states.
17 On 20 June 1997, the 98th instrument of ratification of Article 83 *bis* was received by ICAO, making the provision applicable to states of ratification.
18 Donald H. Bunker, *The Law of Aerospace Finance in Canada*, *supra*, n.6, p.157.
19 Ibid., p.288.
20 (1988) 14 NSWLR 523.
21 NSWCA, 23.12.88, p.16.
22 *Supra*, n.21.
23 See *Waltons Stores (Interstate) Ltd* v. *Maher* (1988) 164 CLR 387.
24 *The Queen in Right of Ontario* v. *Ron Engineering and Construction Eastern Ltd* (1981) 119 DLR (3d) 167. Courts may also construct a collateral contract containing terms negotiated at the tendering stage, if such terms are not included in the formal lease document. See *City and Westminster Properties Ltd*. v. *Mudd* [1958] 2All ER 733 (Ch).
25 *Cricklewood Property and Investment Trust Ltd*. v. *Leighton's Investment Trust Ltd* [1945] AL 221.
26 See *Rom Securities Ltd*. v. *Rogers (Holdings) Ltd* (1967) 205 Estates Gazette 427.
27 Rod Margo (1996), 'Aircraft Leasing: The Airline's Objectives', *Air and Space Law*, XXI (4/5), 167.
28 Ibid.
29 Article 83 *bis* admits of all or part of the duties and functions pertaining to Articles 12, 30, 31 and 32(a) of the Chicago Convention being transferred from the state of registry to the state of the operator. The duties and functions to be transferred must be mentioned specifically in the transfer agreement as, in the absence of such mention, they are deemed to remain with the state of registry.
30 See ICAO State Letter EC 2/82, LE 4/55-99/54, Attachment B.
31 It is also recommended that a certified true copy of the AOC under which the aircraft is operated, and in which it should be listed, be carried on board.
32 ECAC Recommendation on Leasing of Aircraft Recommendation ECAC/21-1.
33 Bermuda (UK) and Colombia signed on 18 December 1998 an agreement implementing Article 83 *bis*, which was the first one of this sort to be registered with ICAO (No. 4171 dated 1 February 1999).

3 Slot Allocation and Airport Congestion

Introduction

This chapter examines the problem of airport congestion and its aggravation by the issue of slot allocation for the arrival and departure of aircraft at international airports. Recent trends in the liberalization of market access by many commercial airlines have opened the skies to virtually unlimited flights between many countries. However, this liberalization is stultified by the lack of airport capacity to accommodate the many flights that are generated by demand for capacity. Accordingly, the allocation of slots for 'open skies' airlines remain dependent on the expansion and effective management of airport capacity.

The International Civil Aviation Organization has been addressing the issue of traffic peaks at international airports from 1973. In June 1975, the ICAO Council, at its 85th Session, acting upon its consideration of the subject at an earlier session in March 1974 of traffic peaks at airports from the standpoint of facilitation, which was initially brought up at its 8th Session of the ICAO Facilitation Division in March 1973, requested the Secretariat of ICAO to study the matter further.

Pursuant to the Council's request of 1975, the Secretary General of ICAO established a Study Group on Traffic Peaks at International Airports (TRAP Study Group), which held two sessions between October 1976 and August 1977. The group was charged with undertaking studies of the traffic peak situations (current or recent) at a limited number of international airports, the aim being to establish the facts and experience associated with those situations as fully as possible and thereby facilitate the formulation of guidance and other international action helpful in attacking such situations when they arise. The study group was also required to identify to the extent possible from the studies, as well as from other related experience and information available to the group, such elements as were

sufficiently typical to enable it to formulate conclusions and guidance of general applicability, and to develop therefrom, recommendations as to: (a) specific guidance of general applicability that would be of assistance in combating peak problems, and (b) any other international action that the group believed ICAO might usefully consider taking in the matter.[1]

The airports selected for the study were Sydney, Copenhagen, Frankfurt, Cairo, Nairobi, New York/J.F. Kennedy, Toronto, Caracas/Maiguetia, Bordeaux, Marseilles, London/Heathrow, Prestwick, Hong Kong and Bombay. On the basis of results of the questionnaire sent by ICAO to the states concerned, the study group concluded that, at that time, the severity of passenger peaks (as measured by the average to peak hour ratios) was greatest at Bordeaux and Prestwick (with ratios below 5 per cent) followed by Marseilles, Bombay, Sydney, London/Heathrow (long haul, terminal 3) and Caracas/Marguetia (with ratios in the 10 per cent – l8 per cent range).[2] The group also found that, in the light of the responses from states received, the utilization of passenger facilities was, in general, substantially below that achieved for aircraft movement facilities, when taking the ratios of average-hour to peak-hour traffic as broad indicators of overall utilization at various airports.[3]

The factors significantly contributing to peaks were preference for travel at certain times of the day rather than certain times of the year and the influence of seasonal fares on the market, which, although creating peaks of their own, were considered beneficial from an overall perspective, in that they widened the spread of traffic throughout the year and thereby decelerated growth of the summer traffic peak.

The effect of wide-body aircraft, which were relatively new at that time, was a 'mixed bag' in that, while several airports considered that wide-body aircraft contributed significantly to peaks, it was evident that, in spite of the spatial problem created by these aircraft in the apron and terminal areas, the aircraft delayed runway saturation, thereby deferring the usually more costly development work associated with runway expansion.

The problems brought about by attendant commercial arrangements such as interlining and transiting of passengers were of a somewhat different dimension, in that the demand for increased terminal capacity, gate-lounge space and increase of baggage capacity with regard to baggage handling, directly brought to bear several complex facilitation problems at airports at peak times. These same problems would emerge from such practices as optimization of aircraft utilization and carrier competition.

Curfews imposed on aircraft, calculated to obviate peak problems, were found to be counterproductive in that they tended not only to result in a loss of revenue to activities and airports, but also to trans-

fer aircraft to already busy airports, aggravating the peak problems experienced therein, while creating peak problems for not so busy airports at given times, which had to take in diverted aircraft from curfew-affected airports. Another factor which adversely affected airport congestion was found to be incompetent governmental controls at departure and arrival gates, which created facilitation problems at the terminals.

The study group was of the view that there were two ways in which to ameliorate the peak problem at airports: (a) seeking ways in which to accommodate the peaks, or (b) handling the problem by efficient management of traffic flow. The first measure was found to be proactive, when considering the service rendered to a rapidly evolving and developing air transport industry and the complex needs of a wider travelling public. The inevitable recommendations, therefore, from the study group related to the expansion of physical facilities at airports and aerodromes, more effective use of existing resources and more efficient application of handling procedures. Fundamental to accommodating peak trends, however, was the need at every airport for a cost–benefit analysis of peaks, wherein the costs increased additionally by accommodating peaks could be assessed against benefits brought about by the addition of capacity.

On the issue of management of traffic flows at airports, the group noted the usefulness of scheduling committees in the situation where amelioration of peaks needs to be sought through the management of traffic flow, and recommended that, where such situations existed, their establishment should be considered at least by the more important airports. The procedure seen as being most suitable would be for airport management to decide on the overall capacity to be allocated to commercial operators, and thereafter to leave the scheduling committee to allocate that capacity since, being composed of airlines concerned, it would be best informed as to their individual circumstances and requirements. The International Air Transport Association (IATA)'s support for the recommendation was qualified to the effect that the establishment of a scheduling committee should normally only be necessary when the costs involved in expanding facilities were completely unacceptable, or for the period during which such expansion was proceeding. The group noted that the airlines in particular, through IATA, had been active in the field of scheduling, but airports too were studying this subject in detail.

At many airports the national airline or, where there was more than one, the major national carrier, acted as spokesman of the scheduling committee and also served as the channel through which the administration makes known the constraints applying to airport capacity. In this regard the group pointed out that it was important that all airlines, scheduled and non-scheduled alike, be given the same

opportunity for making their requirements known, and be afforded the same treatment subject to the basic stipulation that they make their tentative schedules known well in advance. This last requirement had often proved difficult for charter airlines to meet and they were consequently often obliged to accept more inconvenient arrival and departure slots than the scheduled carriers.

It was also the group's observation that airport regulations and government regulations sometimes endeavoured to control peak problems by ordering the transfer of certain categories of traffic (usually general aviation and charter flights) to other airports. The group understood, however, that little existed in the form of legally enforceable regulations, and concluded that the main reason why such directives tended not to be challenged was that it lay in the airlines' own interest to see an orderly administration of traffic capacity even at the cost of penalties to certain categories of traffic. The group considered it important that in such circumstances all government regulations in this area should be equitable and fairly administered, since they might otherwise have the effect of inducing retaliatory action from other states which felt their airlines had been unfairly treated.

According to the study, surcharges on traffic movements during peak hours were only levied at two airports. The surcharges had only been in existence for a relatively short period and the group judged that there was no conclusive evidence as to whether or not they had proved effective in reducing peaks. It was recognized that small-aircraft movements might be most discouraged by such charges, but the group also saw the same effect being achieved through a pricing policy that set minimum charges at a high level.

For peak surcharges to be effective, the group was of the view that surcharges would have to be incorporated into the fare structure in a manner whereby they could be passed on to the passengers using the airport at times when the surcharges applied, and even then a shift in travel away from peak hours could be expected only to the extent that demand was price-elastic. Incorporating surcharges in such a manner on a worldwide fare-construction basis would be difficult, but less so on a regional basis. Charter traffic, on the other hand, was recognized as a specific case where such charges could be directly passed on to the passenger. Turning to the broader aspects of the question of airport administrations employing their pricing policy to ameliorate peak problems, the group would emphasize that caution should be exercised in employing this tool, since airports more often than not are in a monopolistic position shielding them from the usual competitive forces that would enable the financial reasonableness and acceptability of changes in their pricing policy to be realistically assessed.

The effectiveness of airline pricing policy as a means of improving peak problems was something that the group found difficult to quantify in any precise terms. However, on the basis of the experience with airline pricing to date, it was recognized that offering significant reductions from base fares during off-peak hours or periods had resulted in a spreading of traffic, and this in itself had caused peaks to be generally less severe than otherwise would have been the case, since even new traffic resulting from normal growth was, in part, directed by such fares to off-peak hours or periods. The group noted that such fares had principally affected the weekly peak patterns, but there was also evidence of a change in the pattern within seasons.

The group also pointed to the feasibility of further educating the general public about airport capacity shortages and the problems that arise at peak times of travel, with a view to achieving a better spread of demand over time. British Airports Authority was engaged in an advertising campaign to this effect that had already been productive of encouraging results. Also relevant in this context was the success achieved by the efforts made in the German Federal Republic to spread travel by staggering vacation periods and school holidays in different areas of the country. As originally conceived, this plan had been seen as a means of improving the utilization of the highway system, but air transport had also benefited from its application.

Apart from the several means of improving peak problems just discussed, the group also suggested that it could be useful for airports to review carefully the various factors contributing to peaks, such as those that may prompt ideas as to the kind of remedial action that may be most effective in the particular circumstances of any given airport. Additionally, the group drew attention to the improvement of peak problems that may be secured through implementation of the Standards and Recommended Practices in Annex 9 (Facilitation) to the Chicago Convention.

The ECAC Study

In March 1993, the European Civil Aviation Conference (ECAC) considered a report pertaining to a study on Modulated Airport Charges Against Airport Congestion: An Economic Way of Regulation,[4] which focused exclusively on modulated charges as a deterrent to traffic peaks at airports. It reviewed some economic principles which were relevant to the analysis as to whether, inter alia, airport congestion on the airside could be minimized by the imposition of air navigation services charges and taxes. The conclusion of the study was that modulation of airport charges (passengers charges, landing and take-off charges) could be an effective way of dealing with congestion-

prone airport facilities. The report hastened to add that scheduling committees and other short-dated strategic regulatory systems were not to be impinged upon, but as a long-dated solution the imposition of changes was considered desirable.

Initiatives of ICAO

The 27th Session of the ICAO Assembly in 1989 adopted Resolution A27-11 (Airport and Airspace Congestion) which directed the Council, when developing Standards and Recommended Practices and Procedures for Air Navigation Services, to pay particular attention to their impact on airport and airspace capacity and to ensure effective coordination in order to avoid duplication of activities of other international organizations. At its 29th Session in 1994, the Assembly endorsed the Strategic Action Plan developed by ICAO which defined, inter alia, objectives[5] of ICAO concerning airport and airspace congestion and ways of achieving those objectives. ICAO objectives with respect to airside aspects of airport and airspace congestion were defined as

> to develop measures for overcoming airport and airspace congestion on a global basis with the following objectives:
>
> 1. identify tasks within the competence of ICAO which can contribute significantly to easing airport and airspace congestion;
> 2. study possible solutions for alleviating congestion problems;
> 3. develop the overall ICAO action plan with objectives defined in the short- medium- and long-term and assist States in its implementation; and
> 4. accelerate the development of systems and procedures for enhancing existing airport and airspace capacity and promote the development of additional capacity.

The Air Navigation Commission of ICAO, which undertook the task of formulating an action plan on airport and airspace congestion, concluded that factors such as the 'knock on' effect of airport curfews on scheduling international operations, particularly for long-haul flights were influenced by environmental restraints on airport arrival/departure flight paths, runway usage, airline hubbing and recognition of a new generation of quieter aircraft.[6] It was also concluded by the Commission that airport and airspace congestion was related to safety regulations and that, in the development of any technical or operational standards associated with enhancing capacity, due regard must be given to existing levels of safety. The Council of ICAO noted the report of the Air Navigation Commission and

requested the Commission to keep the Council advised of further work conducted in the area of airport and airspace congestion.

There are compelling factors that any airport administration should take into account when planning for the injection of additional capacity. These are the responses of the international community in the form of Standards and Recommended Practices as promulgated by ICAO, in order that international civil aviation retains a certain consistency and uniformity in its global activity. For instance, ICAO has in use an *Airport Planning Manual*,[7] in two parts, setting out in detail all aspects of airport planning. ICAO has developed in this document a master planning process which involves plans, programmes and stringent policy that go to make a viable airport. The document serves as a basis for providing for the orderly and timely development of an airport adequate to meet the present and future air transport needs of an area or state.[8] The manual starts from the fact that early aviation history recognized the need for some public control of land in the vicinity of an airport[9] and divides this need to reflect airport needs, that is, obstacle limitation areas and future airport development and so on, and the need to ensure minimal interference with the environment and the public.[10] By this dual approach, ICAO has introduced a whole new area of thought into airport development. What was once a concern to merely provide easy facilities for the fluid movement of air traffic has now become in addition an ecological concern. By this process, airport development now falls into three main areas: (a) the development of airport capacity and facilities; (b) the balancing of airport development with necessary security measures, and (c) the balancing of airport development with ecology: that is, city planning, noise pollution avoidance and so on. The ICAO *Airport Planning Manual* ensures a balance between airport development and ecological considerations.

In its findings, ICAO points out that studies of air quality at certain large airports and nearby areas reflect the fact that cars, airport ground vehicles and other urban pollution sources account for most of the atmospheric pollution[11] and that airports may destroy the natural habitat and feeding grounds of wildlife and may eradicate or deplete certain flora important to the ecological balance of the area.[12] Another ICAO document[13] establishes that bird hazards may be avoided if in the process of planning an airport, migratory bird habits and bird migration routes are considered. The *Airport Planning Manual* also considers the necessity to avoid contamination of rivers and streams by airport waste disposal and drainage systems,[14] the avoidance of noise caused by aircraft to human habitation[15] and highway planning.[16] It even considers revenue generation where airport lands not used for air transport purposes may be used for agricultural[17] and recreational purposes.[18] Finally, the document calls for

a detailed study of the impact of airport development on the environment in the form of an environmental impact statement.[19]

Ecological considerations of airport planning are considered in detail by ICAO in Annex 16 to the Chicago Convention. Annex 16, which has two volumes,[20] deals extensively with aircraft noise pollution in Volume I and with aircraft engine emissions in Volume II.[21] In these documents ICAO sets standards for noise evaluation measures for subsonic aircraft,[22] airworthiness requirements (noise) for supersonic aircraft[23] and the overall monitoring of noise,[24] aircraft smoke emissions,[25] gaseous emissions[26] and measurement techniques thereof.[27] The role of ICAO in the area of securing a harmonious balance between the gigantic strides made by aviation technology and the preservation of the environment has been one of responsibility. It is no mean task to pair off such interests as the economic development of international civil aviation, standard setting for meeting of challenges of the new decade and the next century and the problems of pollution caused by aircraft. In fact ICAO's endeavours at developing civil aviation in these areas go as far back as 1970, when a Special Committee on Aircraft Noise was created. This Committee published a report[28] with futuristic prognoses on noise reduction. Other landmarks in ICAO history reflecting positive action taken on aircraft noise pollution are the Resolution on Aircraft Noise in the Vicinity of Airports passed at the 16th Session of the ICAO Assembly in September 1968[29] and the two ICAO Resolutions[30] passed consequent to the Stockholm Declaration on the Human Environment.[31] The role of ICAO in airport planning has been succinctly identified by one author in the following words:

> The International Civil Aviation Organization has done admirable work in a short span of time in response to the challenge offered. It has made available a manual for airport planning, Annex 16 for the regulation of aircraft noise, and has suggested standards for the preservation of environments through the use of air pollution control measures.[32]

From the preceding paragraphs one could gather that, while the airport congestion problem is grave and statistics throughout the world show alarming trends, much has been done to alleviate the problem. Many nations have already commenced contrived planning and in some cases even the implementation of such plans to accommodate the exodus of air traffic of the next decade and the 21st century. ICAO in the regulatory field and IATA in the operational field have so far abundantly shown their concern and indeed taken concrete action to meet the future challenge. The question now is what more needs to be done in the future, if anything, and how

should the problem be approached? This question will be addressed later in this chapter.

Airport Planning Laws

On an examination of the foregoing discussions on airport congestion no one could say that the problem has not been perceived so far; a fortiori, no one could even say that those responsible for the alleviation of the problem have not attempted to solve it. What now remains to be done is to examine the most proper manner in which to approach this problem in the coming decade and the 21st century. There is no doubt that the planners can take off from where we are at present. However, any future planning by individual states on the expansion of their airport programmes would have to be done with the primary consideration that, 'Looking to the immediate future, air transport will require new forms of international cooperation in technical and economic areas.'[33]

The cooperation referred to in technical and economic areas would have to be further expanded to include security and ecological factors in the technical field and all economic research in city planning and infrastructural development in the economic field. These studies would have to be done in the form of committed and in-depth country studies by individual states taking into consideration futuristic studies of a country's outlook and the financial outlay that the country would be prepared to make for an airport expansion programme. The outcome of these studies could then form legislation for the planning of airports in a state. Such legislation would present, for the first time, a cohesive and enforceable set of laws in that state that would meet the airport congestion problem.

Guidelines for Drafting Laws

Although the concept of airport planning laws can be summed up easily in one paragraph, as above, the three broad areas of ecology, security and infrastructural planning need a sustained approach of study before such are incorporated into laws. For a start, ICAO's *Airport Planning Manual* is geared to provide information and guidance to those responsible for airport planning,[34] where information on a comprehensive list of planning subjects such as sizes and types of projects,[35] task identification,[36] preparation of manpower and cost budgets,[37] selection of consultants[38] and standard contract provisions[39] are given. With these guidelines each state can start its planning process.

The first step to the planning process which would eventually lead to the drafting of legislation is to predict demand for each area and facet of the airport passenger and cargo terminal. Four basic steps have been suggested for this process: the analysis of handling passengers, baggage, goods and mail in the terminal; the identification of optimum capacity levels; the coordination of research in futuristic studies; and the laying of emphasis on areas that need more research in airport planning.[40] It is submitted that the last element, areas that need more research, serves as an appropriate culminating point of fact finding in airport planning. The appropriate end to the ultimate planning process would then be to identify actual demands in quantifiable terms in order that regulations and laws could be drafted to ensure adequate supply for the demands.

Once the economic studies are completed, the final outcome of the process (the drafting of the laws) could begin its phase. At its first phase, the legal draughtsman would have a preconceived set of ecological and security standards to fit into the overall economic picture. To fit ecological and security aspects into the overall economic plan that would make the final airport planning laws, certain factors would have to be made available to the legal draughtsman. Firstly, the planner should outline some critical facts that would be incorporated into the planning law together with substantiating facts and figures. These are the location of the area for the airport and its relation to the city and essential facilities, the location of facilities for the proposed airport or extension (such as fuel tanks, handling and supply access), aeronautical requirements, maintenance facilities and areas, passenger access and cargo areas, designing requirements of terminal buildings and noise mufflers in crucial areas.[41] These considerations would have to be specified in detail in order that the law may unequivocally set out the standards upon which an airport building or extension programme may be undertaken. Further, the requirements should be carefully blended to accord with minimum cost levels and maximum aesthetic standards, both of which require skilled economists, engineers and architects. These elements should then be incorporated into an overall airport system plan allowing for international and domestic air transport. Major issues that may be considered in the introduction of planning laws include the following:

- the relationship between airport and city (distance, access, communication links and so on);
- all personnel involved with airport operations would presumably live in close proximity to the planned airport;
- all air transport-related industry and trading would be centred in the airport region;
- all infrastructure, such as road transport, shopping, schools