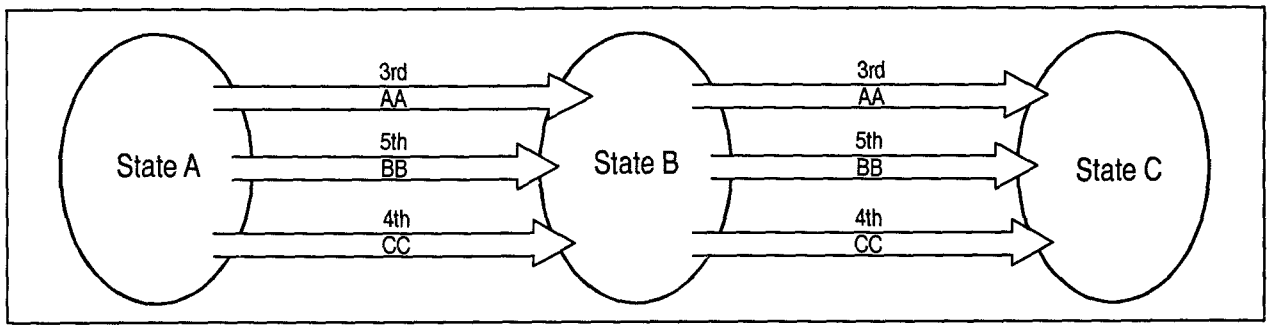

Figure 4.1-2. True origin and destination method

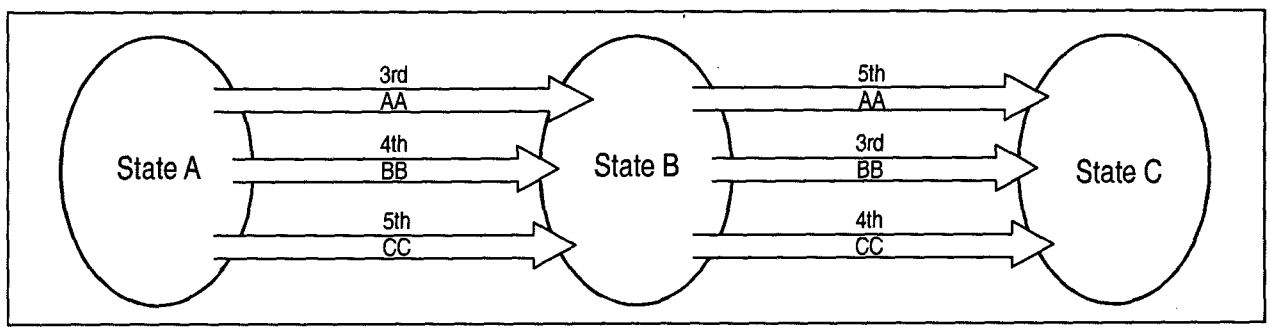

Figure 4.1-3. Coupon or flight sector origin and destination method

State on a service performed entirely within the territory of the granting State (also known as a ***Ninth Freedom Right*** *or* ***"stand alone" cabotage****).*

* * *

Another way by which traffic rights at a given point or in a given market are specified is by according different treatment (i.e. authorization or limitation) to enplaning traffic vis-à-vis direct transit traffic to be transported over a given flight sector. ***Enplaning traffic*** *is traffic being taken on board a flight for the first time and consists of:*

- ***originating traffic****, i.e. traffic which is beginning its outbound movement by air or its return movement by air after a stay at its final outbound destination;*

- ***connecting traffic,*** *i.e. traffic which arrives at a point on one flight and departs the point (transits the point) on another flight as part of a continuous movement under a single air ticket or waybill, without a stopover at the point; and*

- ***stopover traffic****, i.e. traffic which has taken a* ***stopover,*** *an intentional interruption of movement through a point under a single air ticket or waybill for a period of time beyond that required for direct transit through or, when changing flights, for a period normally extending to the departure time of the next connecting flight and (exceptionally) including an overnight stay.* (Note that for the purpose of clarifying the number of stopovers that may be allowed for certain round trip travel, an airline may count the period spent at the final or most distant destination on such journey as a "stopover".)

Direct transit traffic *is traffic which both arrives and departs the point (transits the point) as part of a continuous*

movement under a single air ticket or waybill, without a stopover, on the same or different aircraft identified by the same airline designator and flight number. A ***flight sector*** *consists of any two points along a route at which a take-off and/or landing is made and may involve one or more* ***flight stage(s)****, i.e. operation of an aircraft from take-off to its next landing.*

The right to enplane traffic may be denied or restricted on a particular flight sector or flight sectors other than the principal international flight sector of the route. On a two-sector or multi-sector route, the traffic that may be prohibited is all or some part of the enplaning traffic. When enplaning traffic is restricted, a "blind sector" or a "partial blind sector" is created. A ***blind sector*** *is a flight sector for which no traffic may be enplaned. A* ***partial blind sector*** *is a flight sector for which only specified traffic may be enplaned, such as connecting and stopover traffic only or connecting traffic only. These two categories may be further limited to:*

- ***online stopover traffic****, i.e. stopover traffic which continues its onward movement (after the interruption of the journey) on the same airline, as distinct from* ***interline stopover traffic****, i.e. stopover traffic which continues its onward movement (after the interruption of the journey) on a different airline; and/or*

- ***online connecting traffic****, i.e. traffic connecting between aircraft identified by the same airline designator but different flight numbers, as distinct from* ***interline connecting traffic****, i.e. traffic connecting between aircraft identified by different airline designators and flight numbers.* Note that "local traffic" is sometimes prohibited on a given flight sector. ***Local traffic*** *is an ambiguous term and can signify all enplaning traffic or all originating traffic or all traffic other than* ***transit traffic****, i.e. direct (same flight number) transit traffic plus connecting traffic.*

A blind sector or partial blind sector restriction on an international route inevitably limits the traffic opportunities of an air carrier, with resultant economic costs to its operation. A State, in its bilateral air service relationship with another State, may nevertheless insist on a blind sector or partial blind sector restriction between two points on an international route or routes of the other State to safeguard the revenues of its own carrier(s) (and possibly the carrier(s)' pool partners), to reduce the value of the agreed route(s) for the other State so as to achieve some perceived overall balance of benefits between the two States or, if both the points named are in its own territory, to impose a cabotage restriction.

Note that one State requires foreign air carriers to obtain the prior permission of its authorities to transport what it calls ***"blind sector traffic"***, by which it *means traffic enplaned and deplaned on flight sectors between foreign countries that are "blind" only in the sense that they are not otherwise authorized by the agreed route description and the corresponding licence or permit granted by that State.*

Flight sectors entirely within a foreign country may or may not be blind sectors or partial blind sectors. For example, a *carrier's operation of a* ***circle flight****, i.e. a flight that initially serves one point in a second State, goes on to another point in that State, then returns to the home State of the carrier*, is likely to entail the authorized deplanement of inbound international traffic and the enplanement of return international traffic bound at the first point, and the further deplanement of inbound international traffic and the enplanement of return international traffic at the second point. Similarly, if a State that determines the freedom classification of traffic by its initial origin and final destination, rather than by its coupon origin and destination, wishes to be consistent, it will treat online stopover, interline stopover, online connecting, and interline connecting traffic with a foreign initial origin or final destination as international traffic, rather than as cabotage traffic, and allow its carriage by second country air carriers on flight sectors within its territory.

MARKET ACCESS AS AFFECTED BY THE SO-CALLED "SIXTH FREEDOM"

In 1944 the Chicago Conference formally established only five "freedoms" of the air, two concerning aircraft operations and three involving movements of traffic. The three traffic-related freedoms, the Third, Fourth and Fifth Freedoms, encompassed the full range of possible opportunities for international carriage by air (although, as set forth in the International Air Transport Agreement, their exercise was limited to movement of traffic having both origin and destination in a signatory State on through services over a reasonably direct route to/from the carrier's homeland). The creation of three such freedoms (distinguished from each other by the national origin and destination of the traffic) rather than of a single freedom to pick up and set down

international traffic in the territory of any signatory State encouraged subsequent development of the concept of "ownership" by pairs of States (and by extension by their airlines) of air traffic picked up in the territory of one and set down in the territory of the other. The Bermuda principles of 1946 strengthened that concept by establishing the primacy (and primary "ownership" claim) of each pair of States to such traffic and built upon it by relegating to a secondary and subsidiary role traffic picked up or set down in the territories of third States.

As carriers, routes and traffic volumes grew, so too did the opportunities for airlines to attract varying amounts of traffic moving between two foreign States via their home States. Given the further entrenchment of the concept of national "ownership" of traffic resulting from the bilateral process of exchanging market access rights, it was inevitable that the "freedom" classification of such "homeland bridge" traffic had to be established.

Rather than agree that this traffic between two foreign States constituted secondary Fifth Freedom traffic to which they may not be entitled, States whose airlines benefited from such homeland bridge carriage developed the concept of a new "freedom", the so-called "Sixth Freedom of the Air". (ICAO characterizes all "freedoms" beyond the Fifth as "so-called" because only the first five "freedoms" have been officially recognized as such by international treaty.) The creators of this new concept maintained that the so-called "Sixth Freedom" consisted of a combination of the Fourth and Third Freedoms. Thus, by this definition, the traffic originating in a second State moved as Fourth Freedom traffic to the homeland of the carrier, then as Third Freedom traffic to the State of final destination. In so doing, by this definition, the traffic was "primary" for the homeland bridge carrier on each segment of the passenger's journey.

The second and third States involved, to the extent of their concern with this capture of some or much of "their" rightful traffic (and to the extent their own carrier(s) had few or no opportunities to attract homeland bridge traffic in other markets), had every incentive to maintain that the so-called "Sixth Freedom" was nothing more than "Fifth Freedom" and that such traffic could at best provide only a "secondary" justification for air service capacity provided by the homeland bridge carrier. By extension, this point of view contended that the "freedom" classification of a passenger should be determined by the ticket or "true" origin and destination, not the coupon/flight sector origin and destination. Those with the opposing point of view maintained the opposite position.

As the regulation of bilateral air transport developed, States concerned with the potential or actual diversion of "their" traffic by a homeland bridge carrier undertook various strategies to attempt to prevent, cope with, or end such diversion. These strategies included:

- declining to negotiate any routes to/from the homeland of the bridge carrier;
- severely limiting the capacity allowed the homeland bridge carrier if such routes were established;
- refusing to allow the homeland bridge carrier to participate in some or all discount tariffs authorized to their own carrier(s) in markets between their home territories;
- prohibiting the homeland bridge carrier from holding out and advertising any single-plane services on a so-called Sixth Freedom basis in their country;
- attempting to compromise by treating traffic having a "legitimate" stopover in the bridge carrier's homeland for one or a few days more favourably than directly connecting traffic for capacity regulation purposes; and
- refusing to grant Fifth Freedom rights to the government of a homeland bridge carrier or limiting the ability of the carrier to exercise such rights.

Generally, such regulatory strategies were only marginally successful. The reasons for this included the difficulty in countering the natural inclinations of carriers to maximize their profitable carriage by seeking traffic from all sources, and the preference of air transport users (who are not concerned about esoteric concepts of "freedoms of the air" or of the national "ownership" of air traffic) to accomplish their travel in the most convenient manner, usually by movement on a single airline. (This inclination to use online rather than interline connections is reinforced when free overnight accommodations/tours, etc., are offered at the homeland base of a bridge carrier.)

Notwithstanding the above, the reasons why homeland bridge operations attract traffic, when they do, involve more than airline market promotion or passenger desires. A carrier can participate substantially in homeland bridge carriage only when two other factors are present: its home territory is geographically situated to permit it to do so, and the relevant traffic flows have certain characteristics.

The first factor, the geographic one, comes into play because only those States well situated on a reasonably direct routing between other States which originate or terminate significant traffic volumes have opportunities to serve as bridges. For example, airlines based in southern Africa, southern South America and Australia have virtually no "Sixth Freedom" opportunities because there is literally no place for them to find or take traffic behind their homelands. Carriers based in northeastern Asia can attract North America-East Asia/Southeast Asia traffic flows on a bridge basis. Carriers based in the Middle East, South Asia and Southeast Asia have opportunities to attract Europe-other South Asia/Southeast Asia and Australasia traffic. Carriers based in North America are best situated to attract the limited volumes of available Asia-South America traffic and some Europe-Latin America traffic. Western Europe-based carriers are best located to have access to the most bridge traffic flows, i.e. Africa to/from North America, South Asia/Middle East to/from North/South America, Eastern Europe to/from North/South America and other Western Europe to/from the rest of the world.

The geographic location of a carrier's home base also plays a role in its ability to attract intraregional bridge traffic. Thus a carrier based at or near the centre of Western Europe is well placed to attract Baltic-Mediterranean traffic; one centre-based in North America to attract northern climate traffic to Mexico/Central America/Caribbean sun destinations; and one based in eastern Asia near the Tropic of Capricorn to attract Northeast Asia-Southeast Asia traffic.

The second factor is that of the volume of traffic or capacity on the flight sectors on either side of the bridge State relative to the direct second-third State flight sector size and strength. In the following diagrams the width of the sectors indicates relative traffic and/or airline capacity volumes; States A and C provide the origin/destination points for the traffic; State B constitutes the bridge and its carrier the homeland bridge carrier; price and airline preference factors are assumed to be neutral.

In Figure 4.1-4, a State B-based carrier (BB) is unlikely to attract sufficient A-C traffic away from carriers AA and CC to cause concern to either State A or State C, as long as both its AB and BC markets and services remain small relative to AC services.

In Figure 4.1-5, the relative thinness of the A-C traffic and services (in both directions) enhances the attractiveness of movement via State B on carrier BB. States A and C may have to wait until the A-C traffic volume merits direct service competitive with or better than that given via State B and its carrier BB. In some circumstances the movement of traffic via State B on carrier BB may stimulate the market sufficiently to actually encourage services between A and C by their respective airlines.

A third situation may pertain. Assume that the carriers of both States A and B have agreed access to the A-B originating/terminating traffic. Assume that State A's geographic situation is near the far tip of a continent and its carrier thus has virtually no opportunity to attract any bridge traffic through its home base, but that State B's geographic situation is such that its carrier can attract bridge traffic to numerous countries behind its home territory. The additional "flow" traffic thus gives State B's carrier(s) a clear advantage in serving the A-B market.

In the situation portrayed in Figure 4.1-6, carrier AA could attempt to attract traffic moving via State B, but not without difficulties, because passengers generally prefer to move on a single carrier rather than on an interline basis. While difficulties are unlikely to be fully overcome, States and carriers are increasingly turning to relatively newer approaches such as codesharing, blocked-space arrangements and operating a second country hub which, properly used, can ameliorate the relative disadvantages of the non-bridge carriers. Because geographic facts are immutable, this problem and efforts to deal with it promise to be on the regulatory scene for some time.

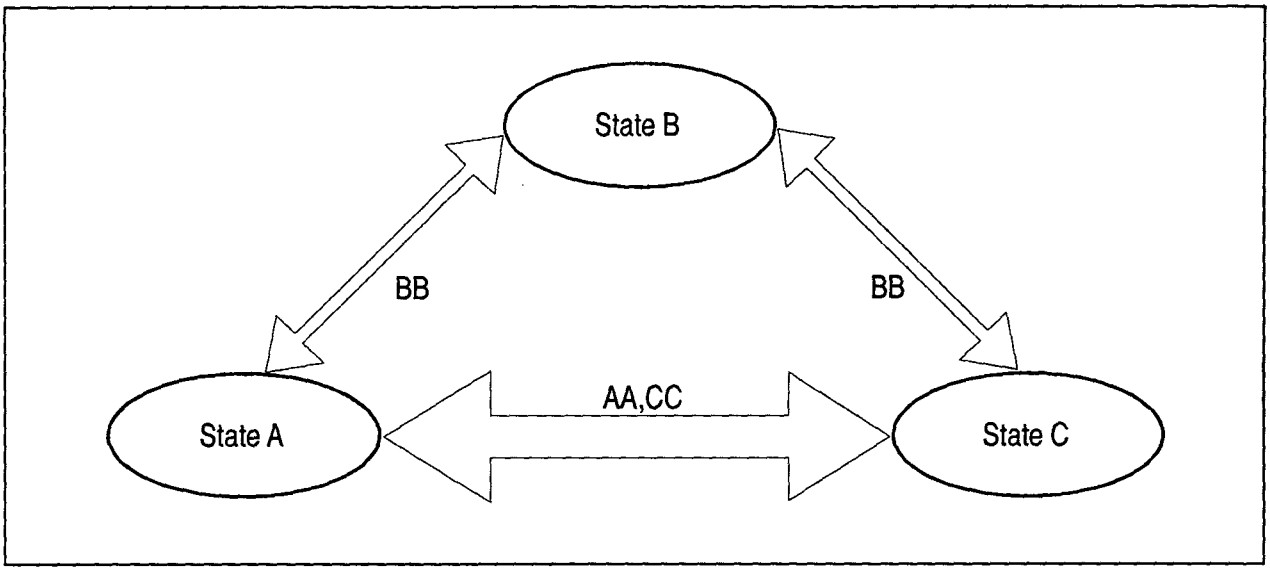

Figure 4.1-4

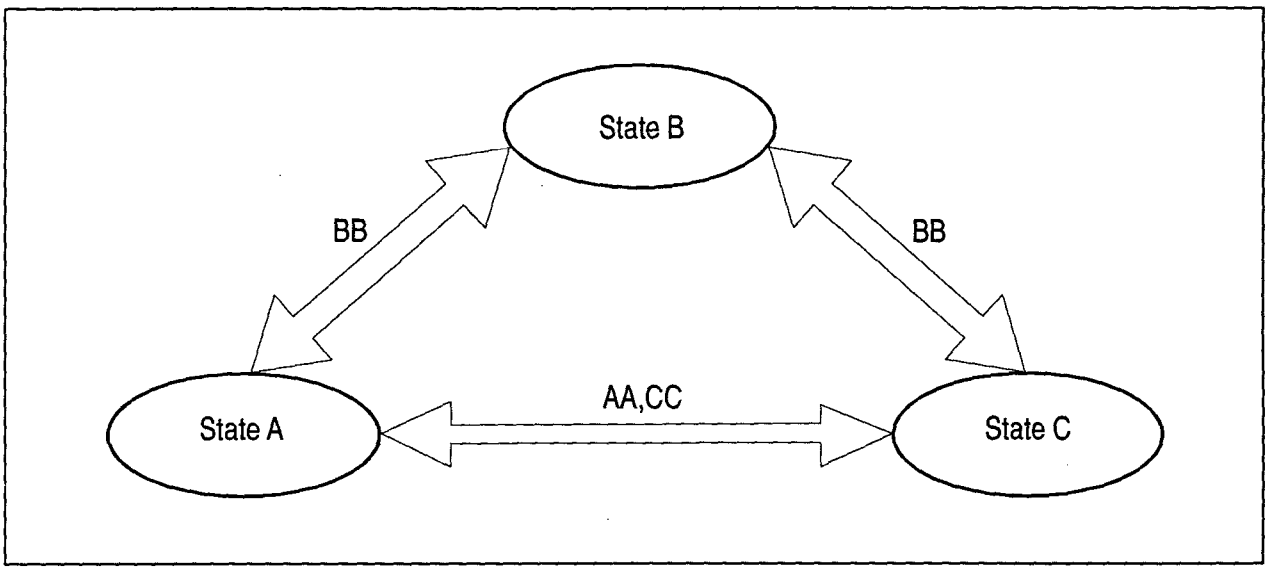

Figure 4.1-5

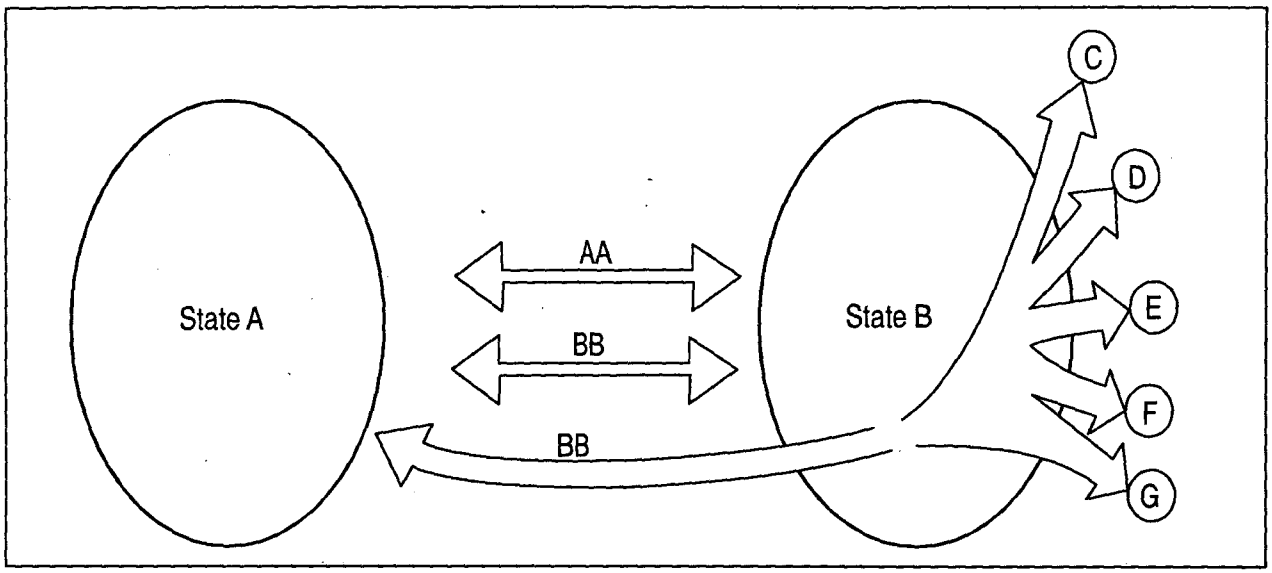

Figure 4.1-6

Chapter 4.2

AIR CARRIER CAPACITY

***Air carrier capacity** is the quantitative measure of air transport services offered or proposed to be offered by one or more air carriers in a city-pair or country-pair market or over a route. It may be expressed in terms of aircraft size, aircraft type, number of seats and/or cargo space (by weight and/or volume), frequency of operation, or some combination of such terms.*

***Capacity regulation** is any method used by governments, separately or jointly, to control the capacity that is being or may be offered.*

Although capacity regulation is a concern of both governments and airlines, it presents different issues for each, reflecting their different interests and concerns. The first section of this chapter describes the involvement of governments in air carrier capacity regulation. The next section presents capacity regulation from an air carrier perspective. When applied to an airport, capacity is usually measured in terms of the number of aircraft movements (i.e. take-offs or landings) the airport can safely accommodate in a specified period of time. Airport capacity can also be measured by passenger/freight throughput (expressed in passengers/freight tonnes per hour).

CAPACITY REGULATION BY GOVERNMENTS

Governments typically regulate the capacity of international air services through negotiation and implementation of their bilateral air transport agreements. States often consider international traffic originating in their territories as national property and as an article of international commerce which must be traded on the best possible terms, whether involving reciprocal rights or other considerations. In bilateral air services negotiations, this "ownership of traffic" concept has enabled States to claim a capacity share proportional to their homeland originating traffic in the market and to treat such traffic between the bilateral partner States as "belonging" to them.

National governments generally view capacity in a broader context than do air carriers. Consequently, capacity regulation inevitably involves a wide spectrum of national interests extending beyond the economics of air transport. In making capacity decisions, governments must take into account national policy goals (such as promoting international trade, tourism and economic development) and their general responsibility for the public interest. For example, governments may want more capacity for passengers and/or cargo to be provided in certain areas or on certain routes than airlines believe economically justified.

National airlines designated to perform international air services are often regarded as national instruments or flag carriers and are treated as part business enterprise and part public utility. In this role, they may at times be required to operate in accordance with the needs of their country's foreign or other general commercial policies rather than the needs of an economically viable air service. Thus, although States generally give high priority to the interests of their own national airlines, they must also bear in mind the air transport capacity requirements of their tourism industries and international trade.

Terms commonly used with respect to air carrier capacity and its regulation include the following:

- ***load factor**, i.e. the percentage of available capacity that is actually sold and used by revenue passengers and/or freight, on a single flight over a single flight sector;*
- ***passenger load factor*** or ***seat factor**, i.e. the load factor applied solely to utilized passenger capacity;*
- ***average load factor**, i.e. the **mean load factor** achieved over a period of time, on a given flight, flight sector or route; in a particular market; or by a particular air carrier;*

- ***break-even load factor**, i.e. the load factor at which revenue achieved equals the operating cost, averaged to reflect results over a specified period of time;*

- ***authorized capacity**, i.e. the amount of capacity, determined by a regulating State or States, that may be operated on a specific flight or route, between city-pairs or between two States;*

- ***conversion factor*** or ***formula**, which is used to equate capacity when aircraft of different capacities are employed in circumstances in which frequency is used as the unit for capacity regulation by States seeking to maintain a strict balance in the capacity offered by competing airlines* (for example, two B767 aircraft might be considered to have the same capacity as one B747 aircraft);

- ***capacity allocation**, i.e. the amount of capacity each airline is permitted to operate when more than one designated airline from a State wishes to use the authorized capacity.*

In developing capacity policy or positions for bilateral air services negotiations, which usually involve direct participation of or input from their national airlines, air transport regulatory authorities face three basic decisions:

- how capacity for each type of service (scheduled and non-scheduled, passenger, cargo, combination, etc.) will be regulated;

- how capacity will be apportioned among airlines providing those types of services; and

- how adjustments in capacity will be made.

As policies on commercial air transport regulation vary (sometimes widely) from State to State, the attitudes and approaches of States toward capacity regulation also differ. Over the last five decades, States have developed many forms of capacity regulation in their bilateral relations. However, the methods used fall into three basic categories, for which model clauses have been developed by ICAO as guidance to States and for possible inclusion in their bilateral agreements. Each model clause is accompanied by a set of criteria, related objectives and guidelines. (See Part 1, Section C, of Doc 9587.) The three categories are:

- the ***predetermination method**, which requires that capacity be agreed upon prior to the commencement of operation*, either by governments or their aeronautical authorities, or between their designated airlines subject to governmental approval;

- the ***Bermuda I type method**, which is a form of capacity control modelled after the one negotiated between the United Kingdom and the United States in Bermuda in 1946*, in which the governments set out the capacity principles for the designated airlines to follow but allow each airline the freedom to determine its own capacity, subject only to *ex post facto* review by the governments through their consultation procedure; and

- the ***free-determination method**, which allows capacity to be decided by air carriers free of government control,* but may require each party to eliminate all forms of discrimination or unfair practices that would adversely affect competition.

In the bilateral negotiation of capacity regulation arrangements, difficulties are likely to arise between States with differing policies or views on:

- the interpretation of "reciprocity" and "fair and equal opportunity" to operate or compete; and/or

- the need for capacity to be predetermined and for air carrier coordination of capacity; and/or

- the probable effects of increasing or decreasing capacity (e.g. on load factor, yields and quality of service); and/or

- the provision and validity of traffic data as a means of determining capacity requirements; and/or

- non-aviation considerations involved in capacity negotiation (e.g. international trade balance, development of exports, tourism needs).

In such situations, the involved parties have to make compromises to narrow or overcome their differences, often resulting in agreements which contain combinations or variations of the three basic methods of capacity regulation. For example, some agreements on capacity reached by States after 1980 combine aspects of predetermination of capacity with the flexibility and rapid adjustment associated with the free-determination method. These arrangements essentially give air carriers freedom to determine capacity within predetermined limits. Included among the methods used are:

- giving advance approval for minimum levels of service (such as daily) and for annual or seasonal increases in the number of frequencies in specific city-pair markets;

- allowing an air carrier to operate a specified percentage, for example 150 per cent, of the capacity operated by competitor(s) from another State, or to match the capacity offered by competitor(s), or to operate the unused capacity assigned to another air carrier;

- allowing the capacity shares between airlines of each State on a route or city-pair to vary by up to, for example, forty per cent for one and sixty per cent for the other;

- utilizing formulas which provide for specified increases in capacity provided a certain average load factor is achieved during a specified period of time; and

- allowing air carriers to determine capacity provided that the aircraft used does not exceed a specified capacity (e.g. sixty seats).

One major problem in capacity regulation concerns the capacity for the carriage of Fifth Freedom traffic. Although the right to carry Fifth Freedom traffic is generally regarded as supplementary to that of the right to carry Third and Fourth Freedom traffic, it is at the same time considered by many to be essential to the economic viability of multi-stop international services. In bilateral negotiations, the State granting Fifth Freedom rights is often concerned about the potential effect of the capacity offered by the Fifth Freedom air carrier(s) of the other State on traffic to/from the third State which may be served by its national airline(s) on a Third and Fourth Freedom basis. The problem also stems from the fact that it is difficult to define precisely when the capacity offered by Fifth Freedom carrier(s) has become so substantial that it is no longer supplemental and is adversely affecting the Third and Fourth Freedom traffic share of national air carrier(s).

Regulation of scheduled and non-scheduled services in the same markets used to be a major problem to some States. In the 1960s and 1970s, non-scheduled services grew rapidly and had become quite important in some major markets (e.g. Europe and the North Atlantic), competing directly with scheduled services. The absence of an agreed capacity regime for non-scheduled operations aroused serious concerns among some governments and scheduled air carriers. It was claimed that the significant capacity then offered by non-scheduled operators had or could have an adverse impact on scheduled air carriers and, therefore, should be subject to stricter control. To address the issue with a view to maintaining a reasonable balance between the involved interests, States developed several regulatory devices for authorizing capacity for non-scheduled services, including:

- permitting a fixed number of flights by type (passenger, cargo, combination) per year or per season;

- adopting directional ratios for specific markets per year or per season;

- using a criterion of no undue effect on scheduled services, while preserving a desired balance between scheduled and non-scheduled services;

- allowing air carriers operating non-scheduled services to operate only or primarily between points which do not have scheduled services;

- allowing air carriers to operate only certain types of non-scheduled flights (e.g. cargo, inclusive tour charters); and/or

- limiting non-scheduled capacity to a fixed percentage (e.g. 20 per cent) of scheduled service flights.

As liberalization progresses and along with the recognition that scheduled and non-scheduled services generally cater to distinct markets, the capacity of non-scheduled services has now become less of a regulatory issue. An additional factor has been the blurring of the regulatory distinction between the two types of services in certain markets.

CAPACITY AS VIEWED BY AIR CARRIERS

Capacity is of vital operational and financial importance to air carriers mainly because of the nature of the commercial air transport business, which has several distinctive features in terms of the economics of its operations:

- the means of production (commercial transport aircraft) it uses are very expensive and must be utilized effectively to generate sufficient revenue to cover the investment;

- the product (passenger seats and cargo space) it offers is perishable (though in a sense renewable) and, unlike manufactured goods, cannot be stored because once an aircraft leaves the terminal, seats or space cannot be sold and are therefore lost; and

- the customers (passengers and freight shippers) it serves are time and/or price sensitive and have different service requirements.

As a consequence, the financial success of an air carrier will depend largely on how efficiently it utilizes its aircraft and how well it matches capacity to demand.

Where possible, air carriers seek to match capacity to traffic demand in order to maximize profits and minimize unused capacity on each flight. This is relatively easy for non-scheduled service operators, since the entire capacity of the aircraft (or major portions thereof) are usually sold (or contracted for) well in advance of operation. However, it can be very difficult for scheduled air carriers because:

- a scheduled service by definition must maintain a regular pattern of operation and generally is expected to fly according to the published timetable regardless of how much of the capacity has been sold;

- there is normally a need to provide sufficient capacity to cater to on-demand traffic (usually higher yield passengers) with seats which may be booked near or up to the time of departure;

- where a multiple stop service is involved, certain seats/space may need to be left vacant for use by en-route joining traffic;

- while traffic demand may vary by direction and time of day, operational constraints may require use of the same type of aircraft (with a fixed capacity) for all flights in both directions; and

- while increases or decreases in demand for a particular service often occur gradually and may not be concentrated at a specific day and time, capacity cannot be added or subtracted in small amounts, but only by an entire aircraft.

Due to these reasons, scheduled air carriers generally provide on average more capacity than the actual traffic (for example, the average passenger load factor worldwide for international scheduled services was 70 per cent in 2001).

Individual air carriers use historical experience and their best estimates of future demand as well as other techniques to determine the capacity to be offered on a route or in a particular market. However, scheduling the right amount of capacity can be difficult because the process is subject to, or complicated by, many factors outside the air carrier's control.

One significant factor is the regulatory regime within which the air carrier is operating. Certain aspects of the regime may inhibit its freedom of action. For example, the air carrier may be required to agree with its competitor(s) on the capacity to be offered on a route. Alternatively, it may be forbidden for competitors to agree on the capacity to be offered on a route. Desired capacity increases may need to be approved by government(s) and/or competitor(s).

A second and important factor is the nature of demand for international scheduled air services. Traffic demand can be affected by numerous factors, many of which are interrelated and some subject to regulatory constraints, such as:

- price (a tariff, if set too high, may discourage use, while a low tariff may result in a higher load factor but produce lower yields);

- frequency (a high frequency service which provides more choices could attract more users, but may not be economically viable on a route with a low volume of traffic);

- route structure (a multiple-stop service is not as attractive as a non-stop service serving the same two cities);

- service via a hub (the required en-route change of aircraft lessens the attraction although the increased frequency typically provided adds to the attraction);

- type of aircraft (passengers generally prefer a wide-body to a narrow-body aircraft, or a jet to a propeller aircraft);

- season (summer may see more people travelling than winter, warm destinations are more popular in winter; a pre-holiday period may produce more freight and a holiday period may produce more passengers);

- the state of the economies of each involved State and/or the regional or global economy (demand will be less during an economic recession);

- the security situation in the destination State which, if adverse, can reduce demand; and

- concerns about flight security in general.

A third factor is the capacity and pricing actions, actual and potential, of competing air carriers in the same market. In a competitive market, capacity becomes an essential means for an air carrier to maintain its market share. Where competing carriers are allowed to decide, independently, capacity and tariffs, there is a tendency that under competitive pressures each carrier seeks to operate more capacity than the other, or to match another's capacity in order to maximize or maintain its share of the traffic. This may lead to a situation of excessive capacity. Viewed strictly from the airline's standpoint, excessive capacity may not be considered to exist in terms of economics if the airline can achieve sufficient revenue to cover cost, even at a low load factor, for example 50 per cent. To individual air carriers, excessive supply means waste of product (i.e. empty seats/space) and tends to cause prices to go down, resulting in reduced yield and financial losses; conversely, inadequate capacity risks turning away passengers/shippers, hence losing potential sales.

Other factors which may have a potential impact on the demand and supply relationship include the availability of other capacity in the form of indirect routings between the involved States (e.g. services provided by Fifth Freedom or "Sixth Freedom" operators) or in the form of air charter operations and, in some cases, the availability of alternative means of transport, such as high-speed rail.

Yet another predicament for air carriers in adjusting capacity to demand is the lead time usually required to acquire new aircraft (i.e. new capacity). Air carriers usually order additional aircraft according to their forecast of future demand and arrange deliveries over a number of years. As demand has a close relationship to the performance of national economies, and collectively to the global economy, which influences airline traffic forecasts, air carriers tend to place their orders when the economy is growing or at its peak. However, because the performance of the economy is usually cyclical and sometimes beyond accurate prediction, it may happen that years later when the carriers' new capacity arrives, the economy is in a slump or at the bottom of the cycle and traffic demand has fallen off. To mitigate such situations, air carriers are increasingly adjusting their capacity by leasing aircraft, deferring delivery, or even cancelling orders.

Given all these features of the industry, air carriers generally deal with capacity in three ways. First, air carriers participate in, or seek to influence, government policy and decision making with respect to capacity regulation in order to secure a favourable regulatory environment and to ensure that their interests are taken into account. They also generally participate in the bilateral consultation process involving capacity arrangements and often rely on government assistance in solving capacity problems or settling disputes which they themselves are not able to resolve.

Second, in order to achieve optimum operating results, individual air carriers seek to enhance their aircraft capacity utilization through:

- better fleet planning based on more accurate traffic forecasts so that capacity will better match demand; and/or

- better scheduling, e.g. flying at user-preferred times to the extent possible, minimizing the ground time of an aircraft spent at arrival/departure gates, and otherwise maximizing aircraft utilization; and/or

- adjusting the ***configuration***, *i.e. the seating and/or cargo space arrangement of an aircraft* to better cater to currently perceived market demands; for example, a passenger aircraft can be arranged to have a ***multiple class seating*** *(e.g. first and/or business, and economy class)*, or a ***single class seating*** (e.g. business only or all economy class).

Optimum operation results may also be sought by employing ***yield management***, *a widely used form of* ***inventory control*** *involving the allocation and frequent adjustment of seat availability for the booking of each of many* ***booking classes*** *(fare types, e.g. normal economy, various discount tickets, free frequent flyer, etc.) and origin/destination combinations, in ways calculated to produce the maximum revenue for each flight sector at the fares offered.* ***Revenue management*** *adds close and ongoing coordination between the price managers who create the fares and yield managers.*

Yet another tool to achieve optimum operating results is ***overbooking***, *i.e. accepting more reservations than the actual seating capacity of one or more classes of services on a given flight sector, typically placing some limits on the volume of overbooked seats, with the expectation that there will be a sufficient number of cancellations or "no shows" by departure time to avoid or minimize denied boarding with the passenger compensation costs it entails.* When