

While several air transport markets are regulated by bilateral air service agreements, more countries are adopting open skies agreements with the result of increased traffic flows and orders for aircraft. The development of bilaterals in some major markets is examined.

Evolution of bilaterals & the aircraft market

Bilateral air service agreements (BASAs) between countries have often restricted the growth of air transport. Many supporters of liberalised air services call for countries to abandon BASAs in favour of Open Skies policies, but Australia, New Zealand, Singapore, the United Arab Emirates and the United States are among the leading advocates of such policies. Airlines in these countries have since experienced radical changes in route network and fleet development. This raises the issue of how the development of BASAs and Open Skies agreements will affect long-haul fleet development.

A bilateral framework prescribes the number of frequencies, and often aircraft sizes, which can be used by airlines to fly between two countries. Bilaterals also often limit the number of entry points, or gateways, to which an airline is allowed to operate. Because of this, airlines often focus on flying between major airport gateways with large aircraft, leaving many smaller markets unserved. Continued deregulation is slowly removing this restriction, however, and may eventually result in airlines providing more flights to more destinations. A study of the economic impact of liberalisation shows that annual passenger growth is generally in the region of 30% in a market in the intermediate period following liberalisation, and can even exceed 100%. Liberalisation therefore produces higher passenger volumes and drives demand for additional aircraft.

Bilaterals

The International Air Transport Association (IATA) Chicago convention of 1944 set the framework for the

existing bilateral arrangements between countries. In the convention, the member states of IATA agreed that bilateral rights for airlines to fly between countries would be negotiated on a reciprocal basis. Each country nominated a national airline, often referred to as a flag carrier, and negotiated for route rights on its behalf. Since most airlines were state-owned at the time, and most countries had only one airline, the process was simple. If the UK and Australia agreed that each of its flag carriers could operate seven frequencies per week, then the British Government would nominate British Airways (BA), and the Australian Government would nominate Qantas. This worked until countries began to have more than one major airline, and the new carriers also pushed for 'flag carrier' status.

Other rules were formulated at the Chicago Convention that shape the industry to this day. For example, one rule is that to be recognised as a flag carrier, an airline must have an outright majority shareholding within its domiciled country. Qantas must be 51% owned by Australian shareholders at all times, for example. Failure to meet this rule can result in a carrier losing its 'flag' status and having to surrender its routes. Many countries, recognising the strategic value of an airline, prescribe a maximum level of foreign ownership at 30%, which limits the amount of foreign investment an airline can secure. Another rule that was defined was the freedom of the skies. Airlines pay special attention to the third, fourth, fifth and sixth freedoms, since these directly affect their ability to operate on different routes.

The third freedom gives an airline the ability to collect passengers in its home country and transport them to another

country. The fourth freedom gives the airline the ability to collect passengers at that destination country and transport them back to its home country. The third and fourth freedoms are therefore the foundations of all existing international route networks.

The fifth freedom allows an airline to collect passengers in a foreign country and transport them to another country that is not the carrier's home base. An example of this is Air New Zealand having the ability to sell seats on the Los Angeles-London leg of its Auckland-London service, even though it is a flag carrier of neither the US or the UK.

The sixth freedom is a prevalent business model, made more topical by the emergence of Middle Eastern carriers. It allows an airline to collect passengers from one country and transport them to another country, providing they stop at the airline's home base country en route. An example of this is Malaysian Airlines carrying passengers from Sydney to London via its base at Kuala Lumpur. The origin and destination of the route are not in Malaysia. Sixth-freedom carriers have been in existence for many years, but they are gaining prevalence due to carriers like Emirates, Qatar Airways and Etihad. Singapore Airlines is the most successful example of such a carrier.

Bilaterals, negotiated between governments, have become less relevant as trade links expand and airlines become privatised, but they mean that governments are effectively negotiating on behalf of private industry. In the UK Virgin, BA and BMI are all privately owned, yet the British Government negotiates for routes on their behalf and then either nominates, or allows bidding, to determine which airline will operate the route.

Australia does not have an Open Skies agreement with the US, but the two countries do have a relatively liberal bilateral air service agreement. Despite this, the distance between Australia and the US means that Qantas has little choice other than to use the 747-400 because of the length of its trans-Pacific services.

Effect on carriers

This historic approach has resulted in many airlines pushing for an Open Skies policy. An Open Skies agreement between two countries completely removes all regulation relating to airline services and capacity, and allows all airlines from those countries to operate whatever services they wish with whatever amount of seat capacity they deem appropriate.

The results in the Europe-USA transatlantic market, one of the first Open Skies agreements in the world, have been dramatic. Airlines switched from large-capacity 747s serving major hubs to 767s, A330s, A340s and 777-200s serving smaller cities. Over a 10-year period more than 45 new city-pairs were launched by American and European airlines, driving demand for smaller aircraft with capacity of 250 seats, down from the 400- to 450-seat 747s that had previously dominated this market. As a result, 82% of all transatlantic flights are now served by aircraft in the 260- to 330-seat range, and only 18% of all flights are served by aircraft with a seat capacity greater than 350.

In the case of most BASA formats the country would nominate gateways that an airline could use, and also specify the beyond points that it could access. An airline would therefore be restricted to flying into a specific city, or gateway, and could codeshare with another local airline only to a pre-agreed number of cities beyond the gateway city. For example, South African Airways has seven entry points into the US, and is able to codeshare with Delta Airlines to 21 more cities. Naturally, the seven entry points are major cities. This type of restriction again influences the type of aircraft that can be used.

Airlines will seek to reduce their risk by selecting the largest cities as gateways, so they are still pushed towards hub-to-hub flying. Flying between hubs means that an airline requires large-capacity aircraft. With Open Skies between the US and Europe, airlines could fly beyond gateways with smaller aircraft like the 767, 787, A330 and A350. For example, Delta commenced service from Atlanta to Nice with a 767.

During the past five years the average aircraft size on transatlantic routes has decreased by more than 40%. The trend towards smaller aircraft flying more



international routes in all markets, often referred to as route splintering, is supported by Boeing, which launched the 787 based on this theory. Splintering is the process whereby new direct services in a city-pair draw traffic away from existing trunk routes, and so reduce the overall size of aircraft required to service the routes.

The 787, scheduled for delivery in 2008, has become the most successful commercial aircraft launch in history. Thirty-eight airlines have placed 471 orders worth more than \$70 billion at current prices since the 787 was launched in April 2004. This level of demand for a new aircraft demonstrates that airlines believe that splintering will create the need for 200- to 300-seat aircraft operating on point-to-point routes.

When bilaterals are eased and Open Skies become prevalent in more markets, new routes will be developed and the need for large aircraft flying between hubs will decrease.

Passengers will have access to non-stop services to their destination instead of having to connect via a hub, which will drive demand for more aircraft. An example of this can be seen on UK-US routes, which are generally viewed as an example of a restrictive bilateral.

In 1994 there were four gateways, other than London Heathrow and London Gatwick, that served six destinations in the US. The four gateways were Belfast, Glasgow, Manchester and Birmingham. In 2006 the four gateways had grown to seven with the addition of Bristol, Edinburgh, and London Stansted, now serving a total of nine US destinations.

Relaxing BASAs to allow more frequency will result in airlines using

smaller equipment and serving secondary cities. For example, BA used the 747-400 to New York when it operated three daily flights, but it now uses 777s and operates 10 daily flights. Similarly, Air New Zealand began to use a 777-200 to London when it moved to double its daily service. It had previously used 747-400s when it was operating a single daily service.

Increased flight frequencies generally result in the use of smaller capacity aircraft, and the liberalisation of BASAs or the adoption of Open Skies policies facilitate this.

Open Sky Progress

Several major Open Skies agreements are either in force or awaiting ratification, with the US having a total of 78 Open Skies agreements with 78 other countries. The largest and most established is the US-Europe agreement, which began with the US-Netherlands agreement in 1992.

After liberalisation of the US aviation market in 1979 the US began to champion the Open Skies concept. Open Skies removes all regulations on capacity and routes, but still prohibits cabotage. An even more liberal concept is the single aviation market, under which cabotage is allowed. Australia and New Zealand operate the only single aviation market in the world.

The US entered an Open Skies agreement with Europe that replaced the previous agreements between individual European countries. The UK is excluded from this process, since the USA-UK agreement is negotiated separately.

Open Skies allows airlines to operate at the increased frequencies that consumer demand warrants. In New



Singapore Airlines has developed its extensive international network with fifth-freedom traffic rights, and Singapore now has an Open Skies agreement with the US.

Zealand, the aviation market has allowed Qantas to operate domestic flights in New Zealand, where it deploys 737-400s. Long-haul aircraft demand generally experiences the greatest benefit from liberalisation. For example, BA and Emirates previously operated 14 flights a week each between Dubai and Heathrow. That number has now increased to over 40 flights per week. This increase, and the subsequent aircraft numbers that were needed, was made possible due to the implementation of an Open Skies agreement between the UAE and the UK. Liberalisation of air markets clearly has a direct impact on aircraft demand and orders.

Asia Pacific

Two regions that generate significant major traffic flows are the trans-Pacific and Europe-Asia. In the trans-Pacific market, Singapore and New Zealand have an Open Skies policy with the US, while Japan, Australia and China do not. "Singapore Airlines has championed the move to Open Skies in the Asia Pacific region," says George Smith, vice president of the Transport Planning Group. "Australia has a very liberal BASA with the US, which has not affected the level of service that the carriers operate. The distance between the two countries limits the aircraft options, with only aircraft like the 747-400, A340-500 and 777-200LR able to operate these long routes. China is still very restrictive, but it has become more liberalised with airlines operating to more destinations. The US carriers are using the 777 into China because of its range and payload performance, while the Chinese carriers are using a mixture of

747s and 777s. Generally, the US-China market is becoming more liberalised and more frequencies are being introduced. The major constraint is still Japan. Japan is becoming less of a choke-point for US carriers, since they now have aircraft that can operate non-stop, and avoid technical stops in Japan. They therefore do not have to rely on the previous US/Japanese method of being an incumbent airline. US carriers can now offer services that bypass Japan, and fly direct to other cities in the Asia Pacific."

The Japan-US BASA has been in existence since the 1940s and provides fifth-freedom rights to nominated US and Japanese carriers, referred to as 'incumbents'. These are United Airlines, Northwest, Japan Airlines (JAL) and All Nippon Airways (ANA). Other US carriers have not had the aircraft with the range performance to operate directly from the US into the Asia Pacific without a technical stop in Japan. United, Northwest, American and Delta all operate flights from the US to Japan, and then beyond to cities such as Hong Kong, Thailand or Singapore. Only the incumbent airlines, United, Northwest, ANA and JAL, have had the right to collect fifth-freedom passengers.

The non-incumbents, which include American Airlines, Delta Airlines and Continental Airlines, could only operate to Japan for technical stops, and were not permitted to pick up fare-paying passengers. It has only been with the recent development of long-range aircraft like the A340-500, 777-200LR and 777-300ER, that non-stop routes between cities in the Asia Pacific and the US, without a stop in Japan, have become a reality. Singapore Airlines uses A340-500s to operate non-stop to Los Angeles,

while Thai International also uses the A340-500 to operate from Bangkok to Chicago.

While Japan may be receding in importance as a stop on the way to or from the US, it is still an important market that delivers significant traffic volumes to the US. "It is doubtful that the Japan-US bilateral will ease in the near term," says Smith. "The established carriers do not want to give up their position in this market. The benefit of Open Skies to the Japanese, which currently only have two international carriers, is limited. With ANA and JAL both being able to operate to the US relatively freely, the only benefit of Open Skies will be on the US side for airlines like Continental, Delta and US Airways." With the BASA remaining in force, the predominant aircraft on the US-Japan routes will continue to be the 747.

The other major international market, Europe-Asia, is becoming more liberalised, with Europe engaging in open-skies dialogue with many Asia Pacific countries. Aircraft with a capacity greater than 350 seats are the predominant type in this market, mainly due to scheduling constraints. The flight time and time zone differences between the Asia Pacific and Europe mean that there are only limited departure windows available to airlines.

Departing from Singapore in the morning, for example, results in the aircraft arriving in Europe in the late evening after curfew hours have closed most airports. Similarly, aircraft departing from Europe in the morning will arrive in Singapore in the early hours of the morning, a time that is unpopular with passengers. Airlines are therefore forced to schedule their departures within narrow time bands, so that most flights bound for Europe leave in the late evening to arrive in the morning or afternoon. Flights from Europe are also scheduled to depart in the evening to achieve the same result. This results in aircraft being grounded for long periods of the day at European airports. There can be up to six daily flights between Singapore and London, all of which leave within two to three hours of each other. All these aircraft provide over 350 seats.

"Flights from Europe to Asia have less options for frequency spread, because of the time bands within which they have to operate," says Guan Chao, director of planning at Air China. "As airlines add frequency they smooth out their

While the UK is unique in that it still maintains a bilateral air service agreement with the US, and is not part of the US-Europe Open Skies agreement, the agreement with the US has been relaxed and British Airways has consequently increased transatlantic frequencies and decreased aircraft size from the 747-400 to the 777-200 on many routes.

departure profile so that they can offer flights throughout the day, but this is not easily done on Asia Pacific-Europe routes. Since airlines cannot spread out their departure times, they have to support sending two or three 747-size aircraft to the same destination by building dense banks around the long-haul services. This means that the routes do not really splinter, and airlines cannot downsize to A340-300/A330/767 size aircraft as readily as in other markets. Singapore Airlines, for example, uses the 777 to feed regional traffic into international departure banks.”

The overall market and traffic between two global regions will splinter, however, if new routes are opened that allow passengers to avoid travelling on these trunk routes. Most routes from Europe to the Asia Pacific, for example, originate from the UK, France and Germany. New routes being opened from The Netherlands, Finland, Denmark and Italy would draw passengers away from the established services.

Aircraft demand

Relaxed bilaterals generally mean that airlines can operate in a deregulated environment, which should drive more orders for aircraft. The question is which type and how many? Already there are signs that aircraft orders are increasing as a result of deregulation. “Existing airlines are generally adding to their fleet to match overall growth,” says Smith. “If passenger volume is growing by 5%, airlines will generally try to mirror that growth with increases in capacity. This will ensure that they are not overexposed on capacity in the event of an industry downturn. The majority of orders for new aircraft will come from emerging airlines that are new entrants into long-haul. This can already be seen with the emergence of Jet Airways and Kingfisher in India, JetStar in Australia and Oasis Airlines in Hong Kong, all of which have placed orders for new aircraft.”

Jet Airways began its long-haul operations using three A340-300s leased from South African Airways, and has since supplemented its fleet with deliveries of new A330s, 787s and 777s. Kingfisher has A350s, A340s and A380s on order, although it is not yet operating long-haul routes, due to India Civil Aviation rules requiring that an airline must operate for



five years before it can fly internationally. Kingfisher is therefore positioning itself to enter the long-haul market.

Other carriers in the Asia Pacific are also following this rule. Fly Asia Express, which is 20% owned by the successful low-cost airline Air Asia, has announced the launch of long-haul services from Kuala Lumpur. The bidding between Boeing and Airbus has yet to begin on this order, but industry expectation is that Airbus will win the bid based on Air Asia's use of the A320 in its short-haul operation. Similarly, Virgin Blue has won approval to launch an international service from Australia to the US. Virgin Blue currently operates regional routes with 737-800s, using its subsidiary, Pacific Blue, and is widely expected to select the 777-200/-300 aircraft for its services to the US. Singapore Airlines was also bidding to launch services to the US from Australia, but its bid was rejected by the Australian Government.

“The majority of new orders are expected to come from new carriers,” says William Carroll, vice president of Regent Air Finance. “However, established carriers are also growing their fleets to meet demand. United has gained approval from the Department of Transport to operate Washington-China, defeating Continental which also applied to operate the route. Delta has just begun service to South Africa, making it the first US carrier to operate scheduled services to Africa since the collapse of Pan Am. US carriers are expanding their international arms and that should drive new orders. The only US carrier currently taking delivery of widebodies is Northwest, which is replacing its DC-10 fleet with A330s. More orders will come from the US majors, but not for a few

more years until their balance sheets have been stabilised.”

Similarly, in Europe, many major airlines are not purchasing new aircraft. Lufthansa, which has become the launch customer for the 747-8 programme and is also on the A380 delivery schedule, is probably the major exception. BA has yet to make a commitment about replacing its older 747-400s, but it has begun a fleet replacement study. Air France/KLM, Europe's largest airline, has not placed orders beyond its initial A380 requirement.

Industry analysts speculate that the weak balance sheets of many airlines, struggling with legacy costs like underfunded pension funds, have reduced airlines' ability to secure funding for aircraft acquisition. Many newer airlines have been able to operate with new aircraft, instead of securing older aircraft from the leasing market. These airlines, with better cost structures, have been able to secure debt at lower rates due to their lower overall risk profile. “While new airlines may have cash reserve problems, they are generally more efficient and less risky than older airlines,” says Carroll. “In India alone, IndiGo, Kingfisher, SpiceJet and Go all launched with new generation aircraft. That is a departure from the standard procedure of starting an airline with older 737/MD-80 type aircraft, and later growing into new generation planes once the balance sheet is strong enough. Although it may seem paradoxical, newer airlines have less credit risk than established older carriers. GOL in Brazil has been in existence for five years and can easily tap the finance markets, whereas Varig has a more difficult time despite being established for 76 years.”



Foreign investment limits an airline's ability to seek investment funding for any aircraft purchases. Because the ownership laws effectively prohibit airlines from gaining equity funding from foreign investors, their options are limited to local investors or debt funding. In some smaller economies local investment is not possible at the required scale, so airlines have to use debt as their financing source. Excessive debt exposure beyond a debt/equity ratio with which lenders are comfortable will result in the airlines being unable to secure funding to purchase additional aircraft. The rules on foreign investment can have a limiting effect on airline growth plans.

Potential routes

With the launch of new airlines and continued competition by manufacturers to sell more aircraft, the selection of new routes by airlines is critical. Are there more routes that can be developed, or will airlines continue to operate existing routes? In either of the two scenarios can the routes be flown profitably?

Since the industry downturn in 2001, airlines have been more ruthless about poorly performing routes. Previously airlines would operate routes on a marginal-contribution, or even loss-making, basis arguing that they contributed a strategic benefit. This is no longer as prevalent, and a route must be profitable otherwise airlines will deploy the assets elsewhere. Each major region will see traffic growth over the next 10 years exceed 5% per annum, and new aircraft orders will have to be placed to meet demand. In 2006 Boeing delivered 91 widebodies compared to 63 delivered in 2005, a 44% increase. This trend is

forecast to continue.

The trans-Pacific is set to become highly competitive over the next few years. The approval for Virgin Blue to operate to the US will drive demand for more aircraft orders. The Qantas subsidiary Jetstar, which is already operating A330s on marginal routes, will receive 787s in 2010. These aircraft will probably be deployed on secondary, leisure routes to the US, such as Las Vegas. Qantas has already increased its presence in the west-coast cities, where it now operates 40 flights a week to Los Angeles and San Francisco from Australia. Qantas, which is the second largest purchaser of A380s behind Emirates, will deploy the A380 on routes to the US and Europe. Airlines in India are also expected to launch services to the US via the Pacific. Currently the routes to the US are one-stop services via a European gateway. Only Continental flies non-stop between New York and Delhi. The delivery of the 777s and 787s for Jet Airways and the A340s for Kingfisher are expected to launch new city pairs of Delhi-Los Angeles, Bombay-Los Angeles and Bombay-New York.

Jet Airways' recent order for 10 787-8s, valued at more than \$1.5 billion, combined with its selection of routes, shows the airline's intention to launch new services on new city-pairs. The airline will take delivery of its 787s in 2011, and will receive the first of 10 777-300ERs in April 2007.

The initial orders support Boeing's analysis of a market that is expected to grow by 6% per annum over the next 25 years. "There will be a lot of emerging routes within the trans-Pacific," says Smith. "New routes and new airlines are expected to add more competition to the

Jet Airways started long-haul operations with A340-300s, and has now supplemented its long-haul fleet with orders for A330s, 787-8s and 777s. These will be deployed on new routes the carrier will start over the next few years. It will be joined in the international market by Kingfisher, which has A330s, A340s and A380s on order.

established players. Previously there were fewer opportunities, because aircraft could only reach the west coast of the US, thereby limiting their options to Los Angeles, San Francisco or Seattle. Also, because most Asian countries had only one major city, the routes were heavily traded. We are now beginning to see splintering, as Thai Airways has launched a non-stop service to Chicago, and Air New Zealand to San Francisco."

Europe-Asia Pacific is another area where new airlines and orders are stimulating the market. With a projected annual growth of 5.5%, it is an area where more frequency to more points will be introduced. The reduction of flying by some European airlines, for example BMI's withdrawal from India and Austrian's removal of routes, may create opportunities for new entrants. Singapore Airlines, Cathay Pacific and Malaysian have all pushed for more services into Europe. Thai Airways began evaluating services to Moscow and Manchester several years ago. Although these routes are yet to be operated, they still demonstrate the airlines' desire to develop new city-pairs.

Summary

The relaxation of bilateral agreements will contribute to new aircraft orders. Continued relaxation, combined with developments in aircraft technology, will give airlines the capability to operate non-stop routes of their choosing. Airlines will no longer need to route trans-Pacific flights via Japan or Taiwan, for example.

While the larger-capacity aircraft, like the 747 and A380, will continue to use an intermediate point on their way to the US, many more routes will be developed that will overfly Japan/Taiwan. The US/Japan bilateral for many years dictated growth in the trans-Pacific market, but new aircraft technology is diminishing its relevance. The emergence of new airlines like Virgin Blue, Jetstar and Indian carriers means that the demand for new aircraft will continue. Developments in bilaterals and the move towards Open Skies agreements suggests that 250-to 300-seat aircraft operating non-stop services will be the preferred option. **AC**

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