

Cessation of 757 production in 2005 has left a 50-70 seat gap between the A321 and the smallest widebodies. Following periods of market adjustment and consolidation, the world's largest short-haul markets have a growing need for a new aircraft with a 200 to 260 seat capacity.

# The market requirement for a 200-260 seat aircraft

There has been speculation about the launch of a new midsize aircraft (NMA) by Boeing for the past two years. This project has been touted as a 200-250-seat narrowbody or widebody aircraft. This would place the aircraft in a similar capacity bracket to the 757 and 767-200. While the launch of this aircraft has been delayed, this article will examine the potential market for an aircraft of this size.

## NMA configuration

The NMA will be sized to fill the gap between the A321, now the largest narrowbody available at 185-190 seats; and the 787-8 and A330-200, the smallest widebodies available.

The 757-200 was the largest narrowbody available before ceasing production in 2005, because the -300 series had not received orders for several years. The A330-200 and 787, at 230-250 seats, are the smallest widebodies available.

There is clearly a market to fill this size gap of 50-70 seats. The issue is what does the market require? The capacity and fleet plans in the world's major market indicate a steady increase in narrowbody aircraft size over the past 10 years. This perhaps indicates some airlines and markets are again ready for an aircraft that is a direct or close replacement for the 757.

Dubbed the 797 in the industry, and positioned at the top of the narrowbody sector and bottom of the twin-aisle market, the new aircraft would be a replacement mainly for the 757 and 767 families. Average age for those aircraft in service is estimated at 20 years old.

It is anticipated that Boeing will designate two versions prioritising the NMA-7X (797-7): a 275-seat model with a 4,500nm (8,300km) range; and later the NMA-6X (797-6), a 225-seat model with a 5,000nm (9,300km) range. Long-term demand is forecasted at 4,000-5,000 aircraft.

The NMA will likely leverage a composite construction similar to the 787. A widebody aircraft with an economy-class cross-section of 2-3-2 will lend itself to a quicker procedure for boarding and disembarking. The NMA is seen as the stimulus to creating new routes and addressing the continued saturation of airports.

A narrowbody configuration would leave Boeing with only the option of a standard six-abreast layout, so the NMA is likely to be sized between the 757-200 and -300. Although the 757-200 proved popular, the -300 experienced excessive embarkation and disembarkation times. While this may prove a disadvantage, a narrowbody will be lighter and more streamlined than a widebody, and have superior fuel burn per seat.

Airbus's closest offering is the A321neo, while the A321XLR provides an extended range performance of up to 4,700nm. The A321 is 60-65 seats smaller than the A330-800. While the A321XLR will allow airlines to operate longer and less congested routes, it will not be able to satisfy higher demand levels on short- and medium-distance routes where airlines have already optimised their service frequencies.

## Market requirement

The market requirement for 200-260-seat aircraft first has to be considered from a historical perspective. It further has to be analysed from the pattern of airline capacity and fleet development from the most recent period of the past 10 years.

The largest and most likely markets for aircraft of this approximate size are North America, Europe, China and the Indian sub-continent. The first three have had considerable fleets of 757-200s and small widebodies, the 767-200 and A310, in the past, and have also experienced steady growth over an extended period. The Indian sub-continent market had a

relatively small base 20 years ago, and operated small fleets and few large aircraft. Since then, like the other three, it has experienced continuous steady growth.

The fifth major global market is the intra-Asia Pacific. This has historically operated widebodies to service the high levels of demand.

The North American and European markets are the most mature, so they experience steady but relatively low growth rates. Both extensively used widebodies in the 1970s and 1980s, with DC-10s and L-1011 prevalent on many US trunk routes. These were followed by A300s and 767s during the 1980s and into the 1990s.

All European major and flag carriers operated the A300, A310 or L-1011 on intra-European routes: British Airways (BA), Air France, Sabena, Lufthansa, SAS, Swissair, Austrian, Iberia, TAP, Alitalia, Olympic Airways and Cyprus Airways.

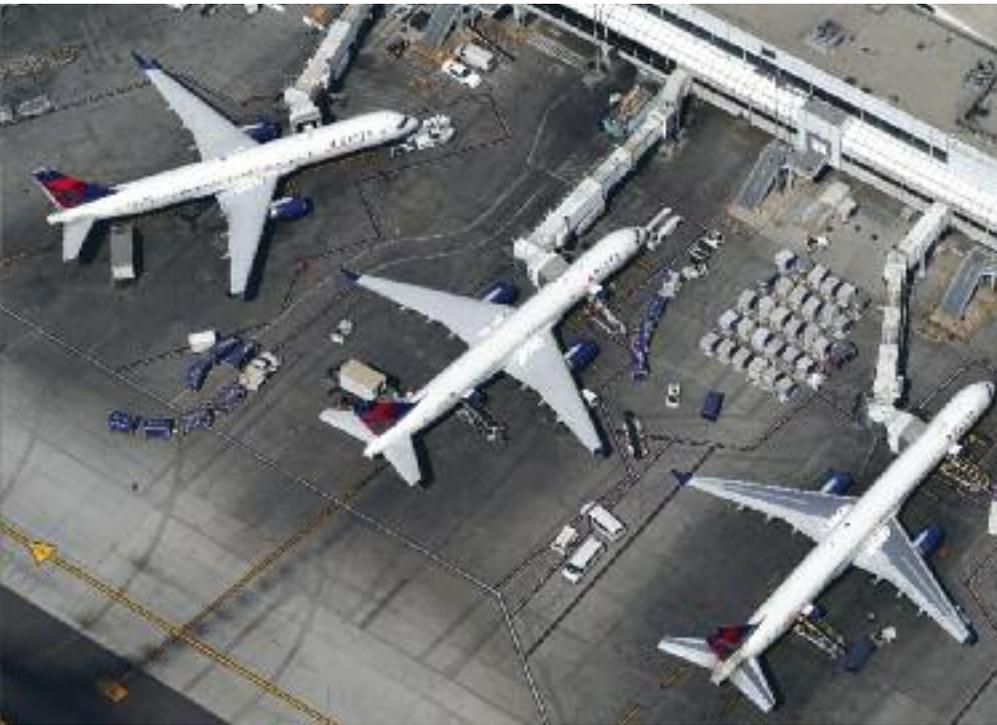
Few operated the 757 except for BA, which supplemented the L-1011 on a few major European routes. BA later introduced the 767-300ER.

Average aircraft size was therefore high on most routes between capitals and major cities in North America and Europe up to the mid-1990s. Moreover, this was during a period prior to consolidation among US majors, and European flag carriers.

## Market adjustment

US majors and European flag carriers experienced little competition up to the mid-1990s. Their general strategy was to achieve medium passenger load factors of 65-70% to minimise passenger spill, and to target high-yield traffic. Intra-European services focused on high-fare business-class services, providing generous space per seat, so many European majors included widebodies as part of this strategy.

The advent of the internet from 1996 led to several changes in North America and Europe. The ability for individuals to make their own reservations with credit



cards allowed airlines to make large reductions in revenue management, marketing and revenue accounting costs. It also, however, forced all airlines to simplify their fare structures. This permitted true competition from low-cost carriers (LCCs), and consequently led to changes in strategies followed by the incumbents.

Not only did LCCs take a considerable market share from the incumbent airlines, but also fares and yields were permanently reduced. Changes to major airline strategy included reduced aircraft size and overall capacity, and an acceptance of lower yields and higher passenger load factors. The main change, however, has been the swapping of 757s and widebodies for narrowbodies on all but the busiest routes.

This means that the A320 and 737 family types have dominated the US domestic, intra-North American, and intra-European markets for the past 15-20 years. Widebodies were the first to be phased out of major airline fleets, with the 757-200 still providing capacity with competitive seat-mile costs. Most 757-200s have been phased out due to age rather than excessive seat capacity.

The LCCs and changes in airline strategy brought about by the internet and self-service, web-based reservations led to a reduction in the market share that the majors had enjoyed up to the mid-2000s. The readjusted market then settled from this point. Major carriers have since reoptimised their capacity-planning by adjusting aircraft size and service frequencies. An airline's optimal service frequencies will be seven to 10 daily flights for many business routes in Europe and North America, and be lower on leisure routes. Airlines will have up to 15 services per day on the busiest trunk routes, such as Boston-New York or London Heathrow-

Paris Charles de Gaulle.

These optimal frequencies have been reached on most routes by many of the airlines serving them on these two continents, in spite of LCCs achieving significant market penetration over the past 20 years.

This development has since led to the average size of aircraft increasing again on these routes. While types like the 737-700, 737-800, A319 and A320 dominated most routes in these two markets 10 years ago, larger narrowbodies that include the 737-900 and A321 now account for a larger portion of the capacity provided on many routes and airport-pairs.

The Chinese and Indian markets have grown at high rates over the past 10 years. The domestic China market has increased seat capacity by 297%, almost a quadrupling in seat numbers. The Indian domestic market has grown by 247% over the same period from 2008 to 2018.

## Capacity development

Airlines develop capacity on each route in similar ways in most markets. The market for a 757/767 or 200-260-seat aircraft is mainly for short- and medium-haul route networks.

The first stage in capacity development will be to match capacity with demand so that passenger load factors are at a sufficient level to keep the operation economically viable. Extreme examples of low volumes on new routes are regional sectors, which in North America were operated with 19-seat turboprops during the 1980s and 1990s.

In the case of emerging and fast-growing markets, such as domestic China and India, new routes will often be between two relatively large cities or at

*The intra North American market is equal first with Europe as the world's largest short-haul market. Total annual seat capacity grew 16% between 2008 and 2018. The US domestic market has about 750 routes with an average aircraft size of at least 160 seats. Routes in this category will require a 200-seat aircraft for at least some frequencies over the next 10 years.*

least service one large city. The large populations and high rates of traffic growth mean that many routes in these countries will be opened with the smaller members of A320 and 737 families, large regional jets, or the A220.

Service frequencies will then be increased to an optimum level by each airline serving the route. This depends on the relative prestige and importance of the route and cities served, and the route network system. For example, hub-and-spoke networks in the US rarely permit more than five sets of departures from main hubs to outstations per day, but a few select routes will have higher frequencies.

Point-to-point services in Europe are usually characterised by higher service frequencies. Service frequencies by individual airlines can be mitigated by those in airline alliances, with partner airlines providing a portion of the capacity.

Airlines will increase their service frequencies to provide the optimum schedule or timetable, especially on business routes, since optimal frequencies on routes with the highest traffic volumes will stimulate demand from high-yield business passengers. Moreover, airlines will have higher rates of service frequency, with larger aircraft types at peak demand periods in the morning and evening.

Establishing optimum frequencies will be a priority for airlines over increasing aircraft size. The exceptions are routes where almost all traffic is low yield leisure traffic. While larger types generally have lower unit seat-mile costs than smaller aircraft, schedules with high frequencies and relatively small aircraft will stimulate demand, customer loyalty and higher yields compared to low frequency services with larger aircraft types that have a cost per seat-mile advantage.

The process of optimising frequencies, given increased levels of competition and fall in passenger yields over the past 20 years, has been established by most airlines on a high portion of routes in North America and Europe, and on an increasing number of routes in China and India. Even relatively young but fast growing routes in China and India will have larger narrowbody types operating services at peak periods of the day and week.

The final stage in capacity and network development will therefore be adding larger types once frequencies are optimised, or in the event that airport and airspace

congestion prevent a further increase in frequencies.

If a large portion of routes have airlines operating at optimised frequencies and most of the capacity is provided by A320 and 737 family members, then aircraft types will have to increase with continued growth.

This development can be analysed by examining the change in capacity on each route in these markets over a 10-year period. This will reveal the average daily frequencies, number of seats per day, and average aircraft size for 2018 and 2008, as well as the change in the number of daily services, number of seats and average aircraft seat numbers. A small change in the number of daily services relative to the number of seats will indicate that frequencies were already optimised by 2008, or reached optimal levels shortly after.

The absolute average aircraft size in 2018, and the increase over a 10-year period, also directly indicates the need for larger types. The main issue is the portion of routes in a market that has experienced an increase in aircraft size, or at least already has a high frequency level.

Capacity data provided by Cirium SRS Analyser for non-stop passenger flights for the full years of 2008 and 2018 has been examined for the markets of China, India, Europe and North America.

## North America

The North American market is the largest of the four markets analysed here. It is characterised by relatively slow growth rates from 2008 to 2018, since the market is mature.

The US domestic market clearly dominates the smaller Canadian domestic, US-Canadian, and US-Mexican markets. The US market has undergone some significant changes since 2008, with several implications in capacity and network planning.

The dominant issue is the consolidation of major airlines during this period. Four larger airline mergers were concluded in this 10-year period.

Before 2005 there were 10 major US carriers, in addition to the LCC jetBlue. Southwest had reached major status. There are now three very large major carriers: America, Delta and United; plus Southwest, and the two smaller airlines Alaska and jetBlue.

The first step in airline consolidation started with America West being absorbed into American Airlines in 2005. Four large mergers were concluded from 2008 to 2018. Northwest merged with Delta in 2008; in 2010 Continental merged with United; USAirways merged with American in 2015. These three mergers created the US's three supercarriers. Each has mainline

jet fleets of 785-910 aircraft, plus regional aircraft operated by regional affiliates.

A fourth merger was completed in 2016-2018 between Virgin American and Alaska Airlines.

Over the same period, all airlines in North America increased their passenger load factors. United's was already high at 81.0%, and increased by 1.5 percentage points to 82.5% in 2018. At the other extreme, Southwest increased its load factor by 12.7 percentage points to 83.9% by 2018. Delta increased its load factor by 3.1 percentage points, and American by 2.0 percentage points. Several other airlines increased their load factors by 3.9 to 7.5 percentage points.

This general increase in passenger load factors by all airlines has absorbed some growth over the 10-year period.

To summarise the change in capacity in North America, annual seats provided on intra-North American services have increased by about 16% from 10.05 billion to 1.17 billion in 2018. The number of flights and services in the meantime remained almost the same at about 10.37 million. The result has been an increase in average aircraft size by 16 seats to 113.

The number of seats over the 10-year period thus increased by 110 million on existing routes, while a further 54.2 million seats were added on new routes that were opened since 2008.

**We've got you covered from take off to landing & beyond**

**Your One-Stop-Shop:**

- > 24/7/365 AOG
- > OEM Distribution
- > Leasing & Trading
- > Technical Services
- > On-Wing support
- > Airframe & Engine Parts supplier

UNITED STATES | United Kingdom | France | Germany | Singapore | China  
 Email: [info@kellstromaerospace.com](mailto:info@kellstromaerospace.com) AOG Support: +1.847.233.5800

**Kellstrom Aerospace**



The North American market is dominated by the three large US majors, which in addition to having a collective jetliner fleet of about 2,600 aircraft, also have fleets of almost 1,700 regional aircraft. This high portion of regionals in fleets keeps average aircraft size relatively low. This situation is maintained by the scope clause limits imposed by major airline pilot unions, which prevent an increase in the size and number of regional aircraft operated.

This macro picture does not provide enough detail on its own to indicate if a 200-250-seat aircraft is required in large numbers. It does illustrate the effects of consolidation in the market, and that despite an overall increase in load factors there has still been an increase in aircraft size of about 18%.

Analysing airline capacity data in terms of departures from 24 of the US's largest hub airports shows the number of routes with an average aircraft size in excess of 100 seats ranges from 20 at La Guardia (LGA) to 116 at Las Vegas (LAS) and 120 at Atlanta. The average aircraft size on these route networks from these 24 hubs is 149-161 seats. This clearly illustrates the dominance of the A320 and 737 families.

There are many other routes with smaller average aircraft sizes, and these will be dominated by regional aircraft types.

Clearly the busiest routes are the most likely candidates to have a requirement for aircraft larger than 180-195 seats. The US network is characterised by the capacity on most airport-pairs being provided by two carriers. This will be two majors in most cases, or a major carrier plus a smaller airline or LCC in others. The threshold for most service frequencies requiring an aircraft of 200 seats or more is likely to be

500,000-600,000 seats per year.

There are 131 routes in North America that have an annual unidirectional seat capacity of 700,000 seats or more. These are the most likely candidates to require a 200-seat and larger aircraft.

Further analysis reveals that there are more than 420 routes with an average aircraft size of more than 170 seats. This group of routes has seen annual seat capacity increase by about 26%.

In addition to existing routes new city-pairs opened during the period added about 54.2 million seats. About 100 routes were added with average aircraft size of more than 100 seats, and those with a total of at least 365 frequencies in 2018 provided 24 million of the new seats.

There were a further 10 million seats provided by 125 new routes with average aircraft size of 30-99 seats that had at least 365 services per year in 2018.

There were a further 19 million seats provided by new routes operated with mainline jets and regional aircraft, but that operated at frequencies of fewer than 365 during 2018.

Analysis of the portion of total seats carried by different groups of aircraft types shows that there was little change, from 13.4% to 13%, between 2008 and 2018 of the total seats were provided by the A321, 757 and all widebodies. There was, however, a drop from 32.7% to 20.3% over the 10-year period in the portion of seats provided by the smaller A320 and 737 families. That is, the A319 and 737-500/-600/-700 series. Concurrently, there was an increase in the portion of seats in the market provided by the A320 and larger 737 variants.

Given that larger aircraft types will be used on routes during peak periods, an

*The intra-European market increased total seat numbers by 36% in the 10 years to 2018. Average aircraft size is larger than the US at 148 seats. There are 240 routes with average aircraft sizes of 160 to 200 seats, and indicate a growing requirement for a type larger than the A321.*

average size of 170 is a sure indication that more services will require an increase in aircraft size into the 200-seat bracket as traffic continues to grow. The average seat size for all capacity on these 420 routes is 184 seats, an increase of seven seats since 2008, while average daily frequency across these routes is 3.6.

Extending this analysis to routes with average aircraft size of more than 160 seats increases the number of routes by about 330 to 750.

The macro analysis therefore clearly indicates that the North American market will require an increasing number of aircraft larger than the highest-capacity variants of the A320 and 737 families over next 10 years. It further indicates that large numbers will be required. This is on the basis of no significant or fundamental changes to the market such as new entrant airlines taking significant market share or a large collapse in traffic due to a major economic or political event.

## Europe

The intra-European market is similar in size to the intra-North American market at 1.16 billion seats in 2018. The change in capacity over the 10 years since 2008 was an increase of almost 36% in the number of seats, and a 11.4% increase in the number of flights and services.

The overall increase in seat capacity was almost 306 million seats, split between 153 million more seats on existing routes, and an equal number of seats provided on new services.

Average aircraft size consequently increased by 26 seats to 148 over the period. This is 34 seats more than the average aircraft size in North America.

The European market is not constrained by scope clause limits. The number of regional aircraft operated is a smaller portion of the total fleet. The regional aircraft types are also larger. Average aircraft size across the European network is therefore larger than North America.

Unlike North America, Europe saw little consolidation among airlines from 2008 to 2018. Moreover, the market shares of incumbent airlines and LCCs changed little over the period. While Air Berlin ceased operations, Norwegian and Ryanair continued to have strong growth.

While total seat capacity grew



modestly, passenger volumes increased by about 45%; this increase in traffic was partly absorbed through higher load factors. Across the whole European network load factors increased from a market average of 77.8% in 2008 to 84.5% in 2018. The number of enplaned passengers increased by more than 40%.

More detailed examination shows that there are 104 routes in Europe with annual unidirectional seat capacities of 600,000 or more. The largest route is about 1.75 million seats each way per year. These 104 routes have average aircraft sizes of 164-196; most have daily frequencies each way of more than 15 and as high as 24.

These 104 routes are a clear indication of the need for 200-seat and larger aircraft, and are prime candidates for this size of aircraft over the next 10 years. Moreover, the growth in this market has been higher than North America, indicating that routes with smaller volumes of seats will also be candidates for 200-seat aircraft.

There are also 140 routes with annual one-way seat capacities of 400,000-600,000 seats, and an average aircraft size of 167. The total seat capacity on these routes has grown by 24% over the past 10 years, and average aircraft size is 20 seats more than in 2008.

The new routes opened in Europe were about 2,750 city-pairs that provided a total of about 105 million seats. These new routes have average aircraft sizes between 160 and 200 seats. The majority, about 76 million, were provided, however, by routes that had less than 365 services in 2018.

Another 27 million seats came from new routes with average aircraft sizes of 100-159 seats, and another 12 million seats came from routes with aircraft size averaging less than 100.

This clearly indicates that the intra-

European market will be a prime candidate for 200-260-seat aircraft over the next 10 years and beyond. More so than North America, Europe suffers from the highest levels of airport and airspace congestion, so major airlines are increasingly likely to operate aircraft of a similar size to the 757, 767/A300/A310 as they did during the 1990s and early 2000s.

## China

The intra-China market is the third largest, with 2018 annual seat capacity being 686 million. This puts it at about 60% of the size of the intra-European market.

The intra-China market is fast-growing, and total seat capacity increased by 297% from 2008 to 2018; an almost tripling in size. This was from 231 million seats in 2008 to 686 million in 2018, an addition of 455 million seats to the domestic network over 10 years. The number of operations increased by 266%. Average aircraft size increased by 19 seats to 168.

China has undergone a consolidation process over the past 10 years. Air China absorbed Shenzhen Airlines in 2011, while China Eastern acquired Shanghai Airlines in 2010. The industry is now dominated by four airlines: Air China, China Eastern, China Southern and Xiamen Airlines. China Eastern was the largest of the four, with the highest number of passengers in 2018. Air China and China Southern carry a similar number of passengers, while Xiamen is about one-third of their size.

The four main airlines carried more than 330 million passengers in 2018. As with other major markets, all four of these airlines increased load factors. Passenger load factors at these airlines increased by

*Services to and from Turkey's main airports at Istanbul and Izmir have some of highest density and frequency routes in Europe. The majority of capacity is provided by larger variants of the 737 and A320 families, indicating a strong requirement for a 200-seat plus type.*

six to 10 percentage points to 80-83%.

The remainder of the passenger growth has been absorbed via increases in capacity growth.

The increase of 455 million seats, and 2,6 million services, is split between 278 million seats being added to routes that existed in 2008, and a further 177 million seats being provided in new city-pairs.

About two-thirds of China's population is concentrated in about one-third of the country's area, so the airline network has the majority of traffic carried through 36 large hubs. These include the largest airports and operations at Beijing, Guangzhou, Shenzhen, Chengdu, Kunming and Shanghai Metro.

Departures from these 36 largest airports account for 80% of China's domestic seat capacity. These 36 hubs have a network of 1,340 routes between them. Average route length is relatively short, at about 700nm. Average aircraft size across these 1,340 routes is 170 seats.

Average daily frequency is about five flights per day in each direction on a route. Seat capacity has grown by 157% since 2008, and so is less than the national average.

Analysis of capacity on the busiest routes in China's network also illustrates the degree of concentration of capacity on a relatively small number of routes.

About 60% of the network's seat capacity is carried on routes with an annual capacity of 400,000 seats or more in a single direction. There are 204 routes with this amount of capacity. The network's largest route, Beijing-Shanghai Metro, had about 3.9 million seats each way in 2018, and 40 daily frequencies. The high density of the route is illustrated by an average aircraft size of 267 seats.

There are five routes with one-way annual seat capacities of 2.5-3.0 million, five routes with 1.5-2.0 million seats, 25 with 1.0-1.5 million, and 168 routes with 400,000 to 1 million seats.

These 204 routes had a total annual capacity of about 310 million seats, equal to about 60% of the domestic network's annual capacity in 2018. This was provided by about 1.8 million departures, and average aircraft size was 171 seats.

What is apparent is that annual seat volumes increase on these busy routes, as do frequency and service level. Clearly these routes have been developed by adding capacity mainly through additional services. Major hubs are not yet congested.

*Seat capacity in the domestic Chinese market virtually quadrupled between 2008 and 2018. Average aircraft size on all routes climbed by 19 seats to 168. The portion of seats provided by the smallest narrowbody types dropped from 42.98% to just 16.2%. These factors indicate that China will again soon require an aircraft with similar capacity to the 757-200.*

Beijing, the busiest airport and with three runways, had about 225,000 domestic departures in 2018, compared to London Heathrow's 471,000 annual traffic movements. The airport has two runways. Most of the 36 Chinese hubs had fewer than 100,000 domestic departures in 2018.

The number of annual seats has increased by 107%, while the number of departures on these 204 routes has grown by about 85% since 2008. Average aircraft seat capacity has therefore increased by 14 to 171 over the same period.

New routes added 177 million seats and about 1.1 million related flights. Most of these additional seats were provided by routes with average aircraft sizes of 160-200 seats, operating at least 365 services in 2018. These contributed 59 million seats, with an average aircraft size of 168 seats.

Another group of routes with average aircraft sizes of 100-159 seats, that had at least 365 services per year, provided a further 39 million seats.

Examination of the portion of all seats provided by groups of aircraft types over the 10 years to 2018 reveals an increase in the portion of capacity provided by the A321, 757 and all widebody types of 2.0 percentage points to 18.4% in 2018. Over the same period the portion of seats provided by the A319 and small 737 variants dropped from 42.9% in 2008 to 16.2% in 2018.

The macro data and pattern of development in the intra-Chinese market indicates a clear requirement for aircraft in the 200-260-seat bracket. Current operations are with a mix of A320 and 737 family types, and widebodies that include the A330-200. All passenger-configured 757s had been phased out of operation by the big four Chinese carriers by 2018.

## India

The Indian domestic market is the smallest of the four main markets, but it has the same rate of growth in seat number capacity as the Chinese domestic market.

All Indian domestic flights in 2018 totalled 169 million seats, about 30% the number of China's market, and about 1.05 million departures, spread between fewer than 200 city-pairs. Average aircraft size across the whole network was 163 seats, an increase of 34 from 2008.

This compares to about 68.5 million seats and 531,000 departures in 2008.



Average aircraft size was 129 seats. Total seat capacity therefore increased by almost 250%, equal to an increase of 100.6 million seats since 2008. This increase is split between 81.8 million seats on existing routes, and 18.8 million on new routes.

The domestic market in India operates from a relatively small number of airports. India's population of about 1.3 billion is similar to China's, but India only has about one-third of China's land mass. India therefore has areas of high population density.

The domestic route network is concentrated on just 72 cities. Most of the capacity is operated from the top 12 airports: 78% of annual seat capacity and 76% of annual departures.

Delhi is the largest, with 29 million seats and 173,000 departures on 39 routes in 2018. Mumbai is the second largest, with 20.6 million seats and 119,000 departures on 41 routes.

Bengaluru and Kolkata are the two next largest. Together with another eight airports, they account for 67 million seats and 412,000 departures on 147 routes.

Despite the concentration of traffic among a relatively small number of airports and routes, some new routes have been opened. This has meant that traffic and capacity growth has been concentrated on existing routes. Operating frequencies across the network have increased from 3.6 per day to 6.5. Average aircraft size is 166 seats.

Operations from the 12 largest airports show an increase in seat numbers of 106-220% from 2008 to 2018. The exception to this is the network from Mumbai, which experienced an increase of just 56%.

Analysing the capacity statistics of routes with the highest volumes of capacity reveals that in 2018 there were 57 routes

with annual one-way seat capacities of at least 400,000 seats.

The busiest route in India is Delhi-Mumbai, with 4.3 million seats each way in 2018. Average daily frequency is 64 flights, and average aircraft size is 185 seats. There are also a small number of routes with annual seat capacities of 1.0 million to 3.0 million seats each way per year. All have similar average aircraft sizes of 67-184 seats.

There are another 38 routes with annual unidirectional seat capacities of 400,000 to 1.0 million. These also have similar aircraft sizes of 160-170 seats. Most also already have a high level of daily frequencies, at 11-16 daily flights.

Of the 18.8 million seats on new routes, 10.6 million seats were on services with average aircraft sizes of 160 seats or more and at least 365 flights per year. A further 1.5 million seats were provided by routes with average aircraft sizes of 100-160 seats.

The limited number of new routes being opened during the 10-year period, the high rate of capacity and service frequency growth, and the already high number of frequencies on the busiest routes strongly indicate that average aircraft size will increase over the next 10 years. This will in turn result in demand for aircraft larger than 200 seats.

The portion of total seats provided by the A321 and widebodies changed little of the 10-year period. The portion of total seats in the market provided by the A319 and small 737 variants dropped by 15.0 percentage points, from 28.5% in 2008 to 13.5% in 2018. **AC**

To download more than 1,200 articles like this, visit:  
[www.aircraft-commerce.com](http://www.aircraft-commerce.com)