



Boeing Commercial Airplanes

World demand for commercial airplanes

2005

# Current Market Outlook

**Demand for Commercial Airplanes**

OUTLOOK

## Traffic and Fleet

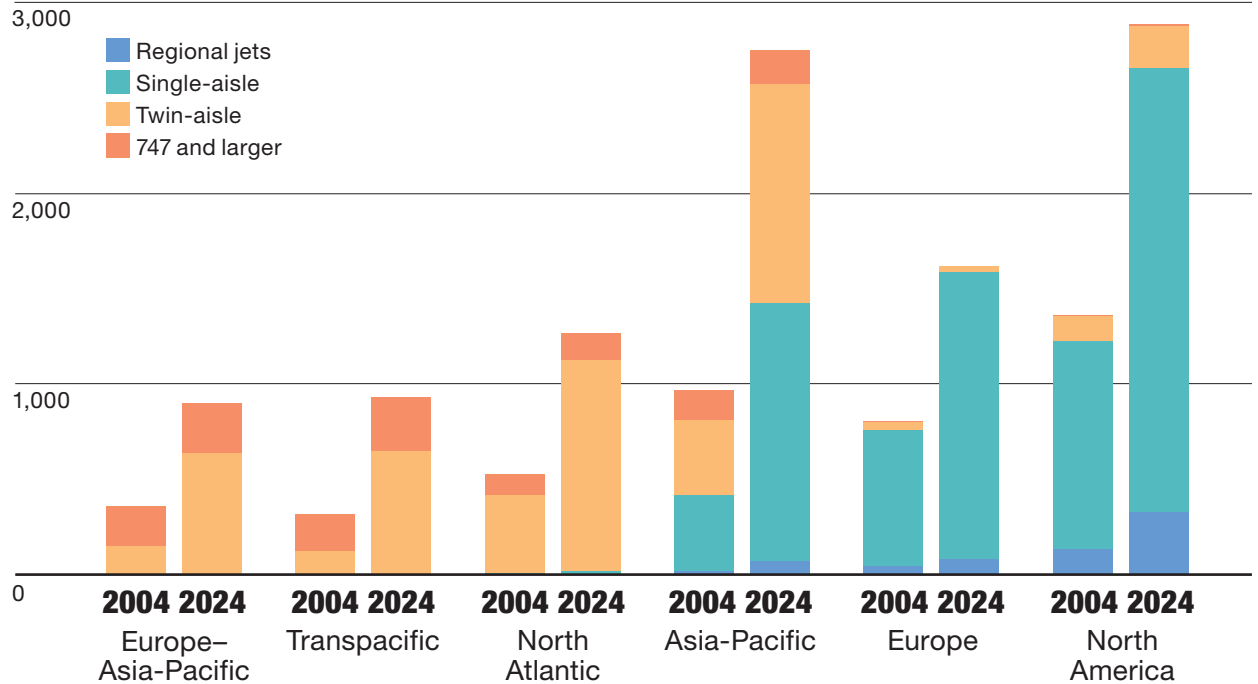
**Airlines purchase airplanes to fly specific routes in response to traffic demand.** Route characteristics vary by region. Airlines need large numbers of single-aisle airplanes to fly the many domestic short-haul routes within North America and Europe. In the long-haul transoceanic markets, twin-aisle airplanes will dominate the fleet, providing more frequency choices and nonstop flights.

**Within Asia-Pacific, a far-flung region that stretches from Northeast Asia to New Zealand and across to India, a mix of single-aisle and twin-aisle airplanes is required.** More than 80 percent of the world's added available seat-kilometers (ASK) generated by 747 and larger airplanes will serve travel to, from, and within the Asia-Pacific region. Because of long routes and the high number of seats on these airplanes, relatively few large airplanes are needed to provide the ASKs that market characteristics require. Asia-Pacific will see single-aisle ASKs more than triple over the forecast period.

**Short-haul markets dominate world departures.** Nearly 17,400 jets in the under-175-seat categories will be delivered by 2024. In short-haul markets, single-aisle airplanes will continue to dominate and will represent over 92 percent of total world departures. Domestic flying in Europe and North America alone will constitute more than 52 percent of the world's added ASKs for single-aisle airplanes.

### Regional Market Evolution Shapes Fleet Requirements

ASKs in billions



## Network Development Strategies

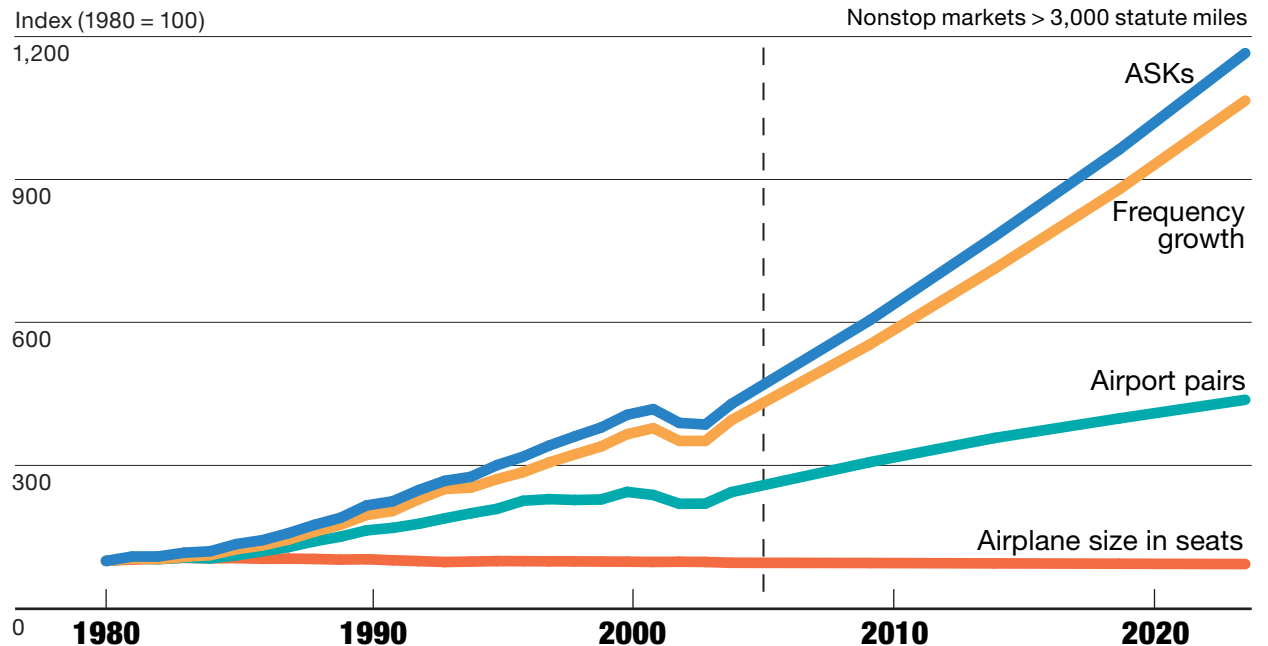
**Airlines' network development strategies influence their airplane acquisition decisions.** Airlines take into account government regulations, airplane capabilities and economics, passenger requirements, competition from other airlines, alliances, and the maturity of an airline's existing network. Over time, network development strategies have increasingly focused on adding new nonstop services; boosting frequencies on existing routes; competing with other carriers on their routes; and building complementary primary, secondary, alliance, domestic, and gateway hub networks.

**Passengers want to reach their destinations quickly.** Passengers will avoid itineraries that require several hub connections and numerous segments to complete a journey. Where possible, airlines will provide passengers point-to-point service on busy routes. When this is not economically feasible, passengers will prefer carriers that move them over a single hub with one-stop connecting service to their final destination.

**These network strategies generally demand that airlines maintain or reduce airplane size to provide frequent, non-stop service.** High-fare customers in particular are sensitive to convenient departure and arrival times. The value they perceive in more flight-time choices outweighs the cost to airlines of offering the added flights.

**Airlines also offer more frequencies as a primary form of nonprice competition.** In the battle for market share and long-term profitability, competitors almost always match fare reductions. With prices matched, the battle for market share takes place in the service arena, with frequency of service being a deciding competitive factor.

### Airlines Provide Passengers With More Frequencies and Airport Pairs



## Adapting to Change

**Cost reductions and increasing efficiency play an ever-larger role in airline decisions.** Although the proliferation of truly low-cost carriers will continue around the globe, almost every airline strives to cut costs and enhance productivity. For some, the goal is to be included among the list of low-cost carriers, while others aim to be the low-cost provider in their particular business models, regions, or niches. The cost-containment mindset is now pervasive and will govern nearly every aspect of the industry for the foreseeable future.

**Technology is improving the way airlines do business.** The Internet has significantly changed the way airlines can price their seats, market their services, and interact with their customers. Transparency allows for easier and faster comparison of fares and schedules. Many airlines are also shifting their passenger check-in, frequent flyer programs, and other customer contact functions to enhance flexibility and control costs.

**Infrastructure develops alongside air travel demand.** History shows that, in specific markets, infrastructure supply and air travel demand are often not synchronized. Fortunately, the system adapts through a variety of mechanisms, such as use of secondary airports, scheduling in nonpeak hours, and improvements in air traffic control.

**The airline industry has a long history of successfully adapting to change.**



## Airline Strategies

**The economic and operational fundamentals of running an airline are universal, although conditions vary greatly around the world.**

Airlines may share similar traits in the aircraft they operate, airports they serve, procedures they follow, and organizations they develop. However, individual airlines create unique identities through a wide range of marketing, operational, and corporate choices. For example, a long-haul specialist might focus on carrying European and North American leisure travelers long distances to its beach destinations.

**Carriers can be broadly grouped according to the similarities in their business propositions and strategies.**

Business model examples include global network, low-cost, long-haul specialist, leisure specialist, short-haul network, and regional. Although the low-cost carriers are increasing their market share, much of the world's airline business is still concentrated in the global network carriers. However, many airlines also utilize the strategies and tactics of other models to adapt their businesses in the rapidly changing air transportation marketplace. For example, some low-cost carriers have added a second class of service to their aircraft, and some of the network carriers now offer a single class of service on selected aircraft for additional coach seating or high-yield products.

**Convergence of business models will continue.** Increasing airplane capability and advancing technology allow airlines to continue to do more with their networks and customers. Carriers face cost, yield, and other pressures that push them to continually adapt to the dynamic environment. Leaping across the traditional boundaries between business models has become a logical way of creating the niches that help make airlines more successful. The Outlook forecast assumes that airlines continue to decrease costs and increase services over time.



## Fleet Growth

**The world fleet is expected to more than double by 2024, growing to 35,300 airplanes.** Over the 20-year forecast period, 7,200 airplanes will be retired from active commercial service and will be replaced. An additional 18,500 airplanes will be needed to fill capacity demand. About 57 percent of the fleet operating today (9,600 airplanes) is projected to still be in operation 20 years from now.

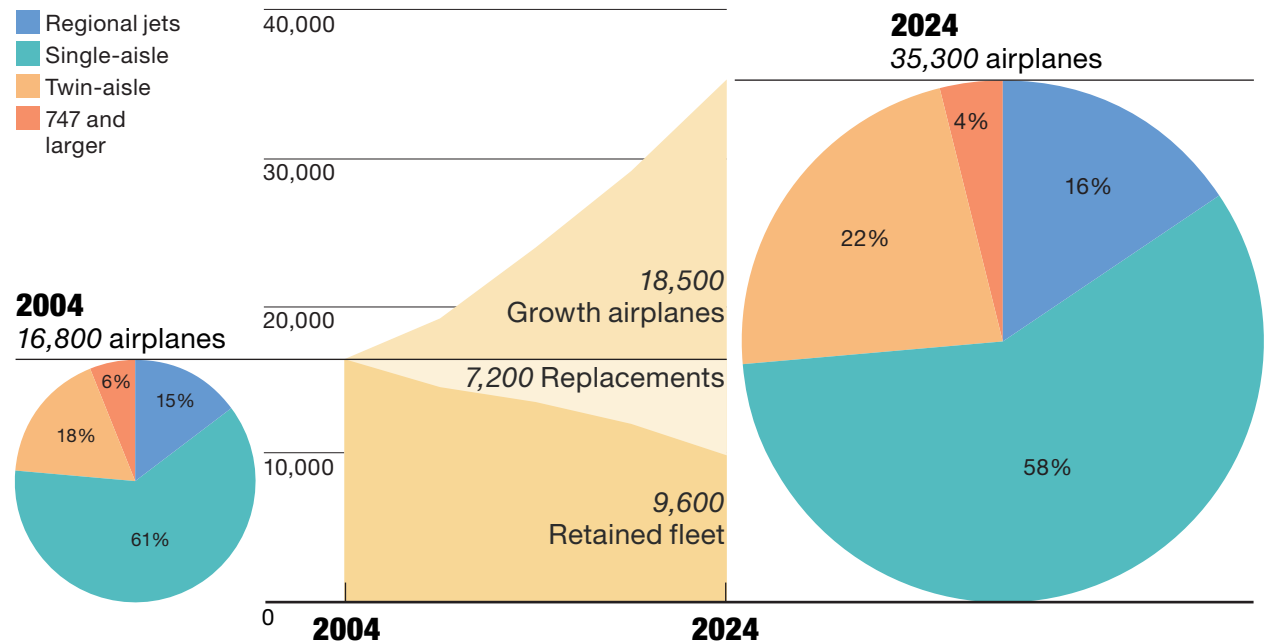
**New airplanes contribute to growth and replacement.** The tally of airplanes added and removed is a straightforward exercise. Defining the number of airplanes attributable to growth and those attributable to replacement is not. The reason is that airplanes are not replaced jet-for-jet, but rather seat-for-seat. The 7,200 airplanes removed from the system will be replaced by some airplanes of equal size, but also by both smaller and larger airplanes. For example, an airline might “replace” its 737-200s (107 seats) with 737-800s (162 seats). On a seat-for-seat basis, only a portion of each 737-800 actually serves as replacement; the remainder may be considered to be growth. The Outlook forecast process converts seats into airplanes.

**Over the 20-year period, approximately 25,700 new airplanes will be delivered to customers.** Twenty-eight percent of the market for new commercial jets can be thought of as replacement for older in-service airplanes. The remaining 72 percent will be required for passenger and cargo traffic growth.

### The World Fleet Will More Than Double

2004-2024

- Regional jets
- Single-aisle
- Twin-aisle
- 747 and larger



# Deliveries

**Three-quarters of the fleet in 2024 will be single-aisle and regional jets.** More than 19,000 jets in these categories will be delivered by 2024.

In short-haul markets, single-aisle airplanes will continue to dominate, although regional jets will play a notable role. U.S. regional airlines are operating smaller jets on new nonstop flights. Regional jets extend the geographic reach of major airline hubs, augment larger jet operations in off-peak hours, replace major airline larger jets on thin routes, and substitute for prop flights. European carriers also will operate large numbers of regional jets, especially in hub-bypass and point-to-point markets. Although not at the high absolute numbers experienced in Europe and North America, other regions such as China and Latin America will expand their use of regional jets over the next 20 years.

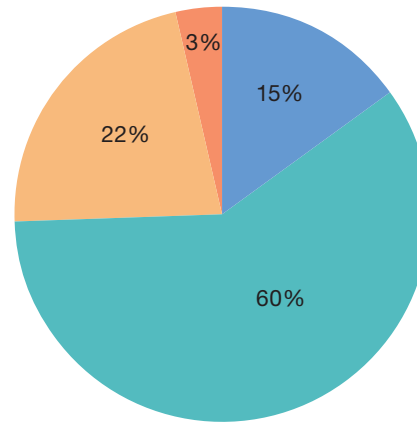
**Twin-aisle and larger airplanes will generate the majority of delivery dollars.** Within Asia-Pacific, a geographically wide region, a mix of single-aisle and twin-aisle airplanes is required.

In the long-haul transoceanic markets, twin-aisle airplanes dominate the fleet. While the share of 747 and larger airplanes will fall from 6 percent to 4 percent, the percentage of midsize twin-aisle airplanes will increase from 18 percent to 22 percent. Twin-aisle jets allow airlines to economically fly the increased frequencies, city pairs, and nonstop flights that passengers desire.

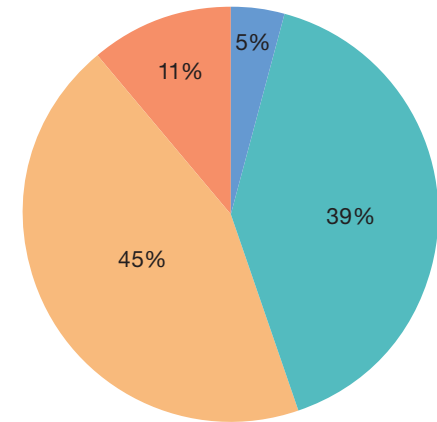
## Single-Aisle Airplanes Dominate Future Deliveries

2005–2024

- Regional jets
- Single-aisle
- Twin-aisle
- 747 and larger



25,700 airplanes



2.1 trillion delivery dollars\*

\* In year 2004 dollars

## Demand for Freighter Airplanes

**The freighter fleet will nearly double over the next 20 years**

**from 1,760 to 3,530 airplanes.** Taking 1,100 retirements into account, almost 2,900 airplanes will be added to the freighter fleet by 2024. Widebody freighters, currently 47 percent of the fleet, will supply more than 60 percent of these additions. The number of widebody airplanes will nearly triple.

The shift toward widebody freighters will result in a fleetwide increase in average freighter airplane payload.

**Operators such as express carriers often prefer medium widebodies as a replacement for retiring standard-body freighters.** Thus, the share of standard-body freighters will decrease from 53 percent to 36 percent over the next two decades. By 2024, freighters of all sizes will provide more than half of the world's total air cargo capacity, a slight increase from today.

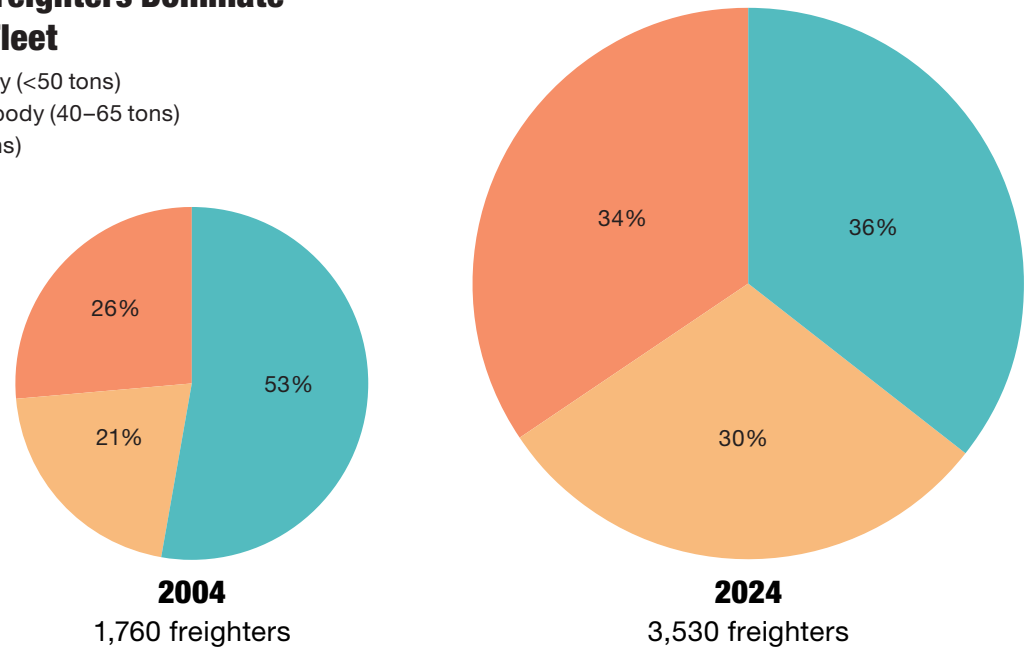
**Three-quarters of freighter fleet additions during the next 20 years, satisfying both market growth and replacement needs, will come from modified passenger and combi airplanes.** Half of these conversions will be widebody conversions.

**By 2024, 725 new production freighters will enter the fleet.**

Although new airplanes will make up a minority of the world freighter fleet by 2024, many airlines do prefer the technical advantages, reliability, and fuel efficiency of new airplanes. The value of all the new freighters totals \$155 billion in current U.S. dollars.

### Widebody Freighters Dominate the Future Fleet

- Standard-body (<50 tons)
- Medium widebody (40–65 tons)
- Large (>65 tons)



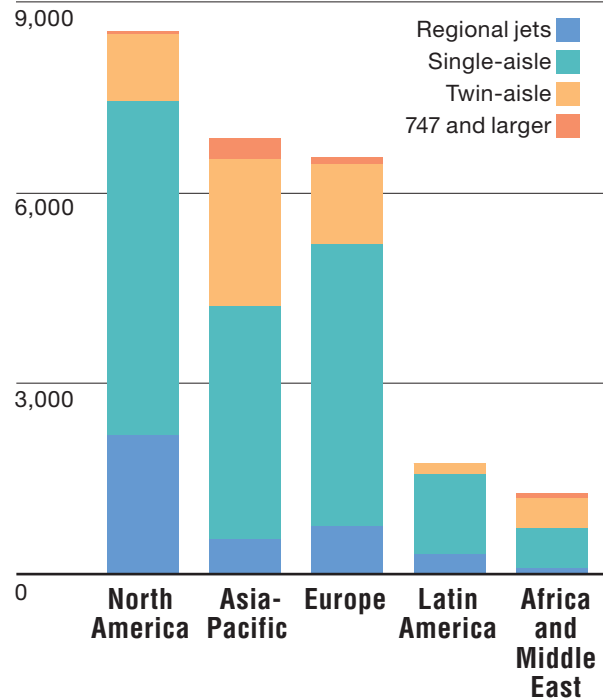
## Deliveries by Region

**The mix of airplane models and number of deliveries varies widely by region.** On the passenger side, the world's airlines will add almost 25,000 new airplanes over the next 20 years. North America, with its large number of experienced travelers and its need to replace an aging fleet, will require the most airplanes. The largest number of regional jet deliveries will be in North America. In Europe, almost 80 percent of deliveries will be single-aisle airplanes and regional jets. Asia will take deliveries of the most 747 and larger airplanes.

**The world's airlines will add almost 2,900 new and converted freighters by 2024.** As described in the Boeing *World Air Cargo Forecast*, factors such as airline strategies, retirement rates, and varying growth rates of major trade flows and market segments will affect the sizes of new and converted freighters added to each region. For example, large U.S.-based air express systems will add many medium and large widebody freighters for both growth and replacement purposes. Asia-Pacific and European airlines will add many large long-haul freighters, especially new and converted 747s.

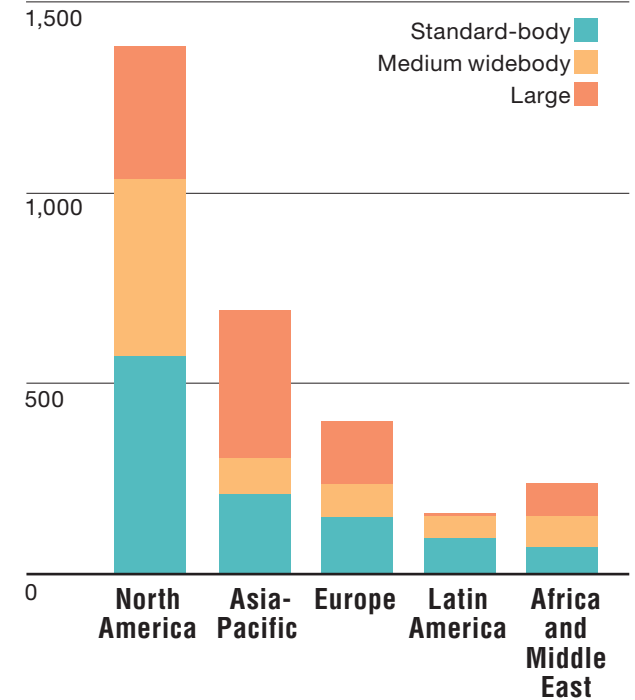
### Passenger Airplane Deliveries Vary by Region

Number of new airplanes, 2005-2024



### Freighter Deliveries Vary by Region

Number of new and converted airplanes, 2005-2024





## Boeing Commercial Airplanes

Market Analysis

P.O. Box 3707, MC 21-28

Seattle, WA 98124-2207 USA

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