

ASCEND

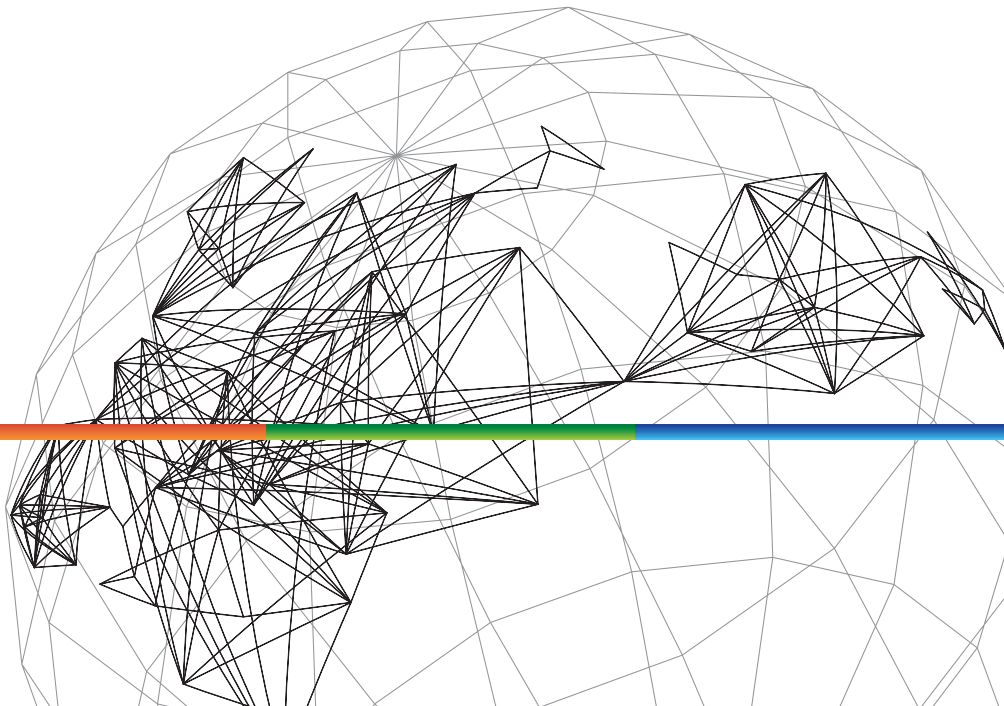


Flightglobal Fleet Forecast 2013 – 2032

Independent outlook of the
global commercial passenger
and freighter aircraft market

Ascend – A Flightglobal Advisory Service

Ascendworldwide.com



The Flightglobal Fleet Forecast estimates that 35,450 new commercial jet and turboprop aircraft will be delivered into passenger and freighter airline service between 2013 and 2032. In addition to those new deliveries, a further 1,720 current passenger aircraft are expected to be converted to freighter use over the period of the forecast.

The total value of these new deliveries, estimated from Ascend's 2013 Base Values, is expected to be around \$2,450 billion. Base Values are used to estimate the future delivery value since these deliver a more pragmatic estimation of actual business value than the inflated manufacturer list prices often used in other forecasts.

Around 14,650 passenger jets and 1,580 passenger turboprops are expected to be permanently removed from passenger service, with around 1,460 of the former and 260 of the latter converted to freighter service. A small minority of the remaining aircraft may be converted to other non-commercial roles but the vast majority of the remainder are expected to be dismantled for spare parts, which will support the remaining in-service fleet.

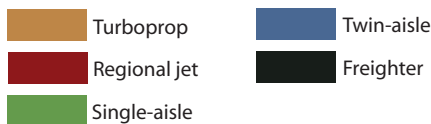
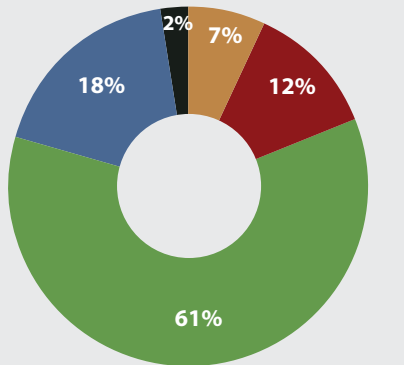
The global commercial aircraft fleet in service is expected to increase by more than 180% by 2032 when 36,050 passenger jets, 4,110 passenger turboprops and 2,820 commercial

freighter aircraft are expected to be in service. More than 40% of the jet aircraft are expected to be operating in Asia-Pacific and China, where continued higher-than-average growth rates will see those regions remain the key drivers for growth and new aircraft demand in the next 20 years.

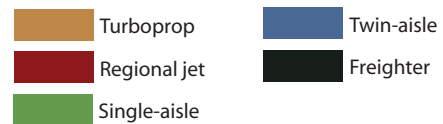
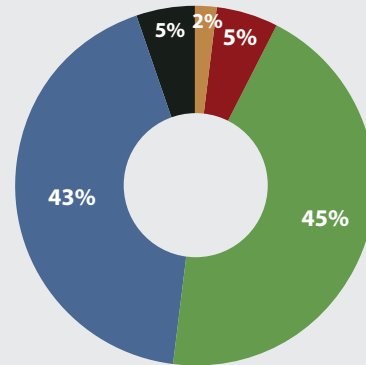
Airbus and Boeing are expected to remain the two largest commercial aircraft OEMs, between them delivering an estimated 87% by value of the world's commercial jet aircraft through 2032. However, Bombardier, Comac, Embraer, Irkut and Mitsubishi are all expected to capture increasingly significant volumes of jet demand, between them accounting for more than \$272 billion of delivery value in the forecast period. One or more of these manufacturers could see further increased market share in the latter years of the forecast if they are able to make inroads into the twin-aisle market, which remains the last duopoly in the commercial aircraft sector today.

The turboprop niche is expected to be worth \$53 billion over the next 20 years. The majority of this value is focused in the larger aircraft segments. The 90-seat sector, in which there are currently no launched products, is expected to account for almost 50% of this opportunity. Consequently, we expect one or more manufacturers to launch a product for this market shortly.

FORECAST DELIVERIES



ESTIMATED DELIVERY VALUE (\$BN)



ABOUT THE FLIGHTGLOBAL FLEET FORECAST

Flightglobal is delighted to present this all-new 2013 Flightglobal Fleet Forecast. This annual report, developed by our Ascend Advisory and Flightglobal Insight teams, encapsulates more than 60 years of combined industry experience and expertise, allied with Flightglobal's unrivalled commercial aircraft database resource, to deliver a deep insight into the future outlook for the commercial aviation industry. This truly independent report sets out the predicted evolution of the world's commercial passenger and freighter aircraft fleet, together with the deliveries into and retirements from that fleet over the next 20 years. The fleet totals in each of eight global regions, together with new deliveries, retirements and freighter conversions for airlines in those regions, are all projected on an annual basis through 2032. The analysis details each of those parameters on an individual aircraft programme level, delivering an unrivalled understanding of the outlook for all known current and future commercial aircraft production families.

ABOUT US

Ascend, a Flightglobal advisory service, is a leading provider of expert advisory and valuations services to the global aviation industry. We provide specialist, independent services that inform and shape the strategies of aviation businesses worldwide, helping them to successfully compete in today's global market. Companies large and small rely on Ascend to take their business to the next level. Ascend offers an unrivalled breadth and depth of aviation expertise and experience, backed by unique access to robust industry data. We provide an impartial yet informed perspective to help organisations direct and manage their investments to deliver the very best return.

WHY CHOOSE THIS FORECAST?

- Independently compiled and verified
- The demand based methodology utilised is the product of years of expert refinement
- Forecast model utilises the combined Flightglobal and Ascend Online databases
- Only forecast available stretching 20 years into the future
- Only forecast available providing granular projections of aircraft fleet and deliveries by type and region per year

ENABLING YOU TO

Financiers, Investors, Lessors & Insurers

- Position aircraft finance, investment and trading strategy to provide for medium and long- term demand
- Understand the on-going influence of new deliveries and new models on residual value risk

MROs

- Understand future shape of fleet for maintenance demand
- Confidently prepare for introduction of new aircraft variants

OEMs

- Identify prospects for current and future programmes
- Help shape future business strategy

Airlines

- Plan future fleet based on availability trends
- Assess impact on current operating fleet

Airports

- Determine future traffic levels
- Prepare for introduction of new aircraft types

Regulators

- Understand impact of legislation on future fleet
- Inform future regulatory action

Training & Simulator Providers

- Plan future training programmes
- Inform simulator purchase decisions

METHODOLOGY

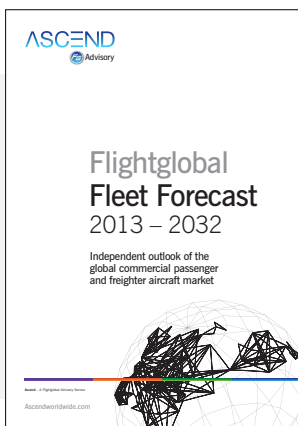
The Flightglobal Fleet Forecast is a **demand based model** which estimates the future fleet, retirements and deliveries of commercial turboprop and jet aircraft in both the passenger and cargo sectors, based upon detailed analysis of historical trends and developments in the commercial aviation sector. Drawing upon Flightglobal and Ascend's extensive data and knowledge resource, the forecast projects the evolution of the global commercial airline fleet and consequent demand for new aircraft through sophisticated modelling of traffic demand, aircraft retirements, fleet development and the future aircraft manufacturing scenario.

Passenger traffic demand forecasts are derived from analysis of historical passenger traffic in each of eight forecast regions. The relationship between this traffic demand and historical GDP and yield trends is used to derive a projection of future traffic demand. Load factor trends are analysed to project future capacity required to fulfil this traffic demand.

The **fleet required** in each region required to fulfil this capacity demand, through an historical analysis of capacity and fleet data. The fleet analysis is based upon the Ascend Online Fleets database, which provides access to full histories of over 75,000 commercial aircraft by serial number. With the total capacity and productivity factors forecast, the fleet required in each region and aircraft category is projected as a product of these forecasts.

Retirements of the baseline fleet are projected based upon extensive analysis of historical removals from service over the past 20-years. Ascend applies a survivor curve methodology to understand this historical behaviour. This methodology compares the profile of aircraft remaining in service, by year of delivery, at the end of each of the past 20-years, relative to the number of aircraft delivered into service. Thus, the survivor curve for each year and a statistical distribution of those survivor curves is built for each aircraft group and role (passenger and / or cargo), and applied to the baseline fleet to estimate annual retirements over the forecast period.

Delivery forecasts are a product of the projected fleet and retirement forecasts. As the fleet grows in response to continued traffic (demand) growth, and the residual fleet declines as a result of retirements, new aircraft deliveries will be required each year to fulfil this aircraft growth and replacement demand. In the case of the freighter market, it will be a mixture of deliveries and conversions which fulfil the demand. Analysis of the existing and future competitive scenario, together with a view on which aircraft types and variants are expected to be in production, delivers the outlook for new aircraft deliveries by programme for the duration of the forecast.



For more information about the Flightglobal Fleet Forecast contact our specialist sales team at fleets@ascendworldwide.com or visit Ascendworldwide.com

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- Embraer E175/E190/E195 E2

- Mitsubishi MRJ

- Sukhoi Superjet 100

- Potential new RJ development

Single-aisle passenger jets

- Airbus A319/A320/A321 (A320ceo family)

- Airbus A319neo/A320neo/A321neo

- Boeing 737NG

- Boeing 737 Max

- Bombardier CSeries

- Comac C919

- Irkut MC-21

Twin-aisle passenger jets

- Airbus A330

- Airbus A350XWB

- Airbus A380

- Boeing 747-8I

- Boeing 777

- Boeing 777X

- Boeing 787

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