

World Fleet Forecast

2013



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AVOLON 

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Dick Forsberg has over 40 years' aviation industry experience, working in a variety of roles with airlines, operating lessors, arrangers and capital providers in the disciplines of business strategy, industry analysis and forecasting, asset valuation, portfolio risk management and airline credit assessment.

As a founding executive and Head of Strategy at Avolon, his responsibilities include defining the trading cycle of the business, primary interface with the aircraft appraisal and valuation community, industry analysis and forecasting, driving thought leadership initiatives, setting portfolio risk management criteria and determining capital allocation targets. Prior to Avolon, Dick was a founding executive at RBS (now SMBC) Aviation Capital and previously worked with IAMG, GECAS and GPA following a 20-year career in the UK airline industry. Dick has a Diploma in Business Studies and in Marketing from the UK Institute of Marketing is a member of the Royal Aeronautical Society and also a Board Director of ISTAT (The International Society of Transport Aircraft Trading).

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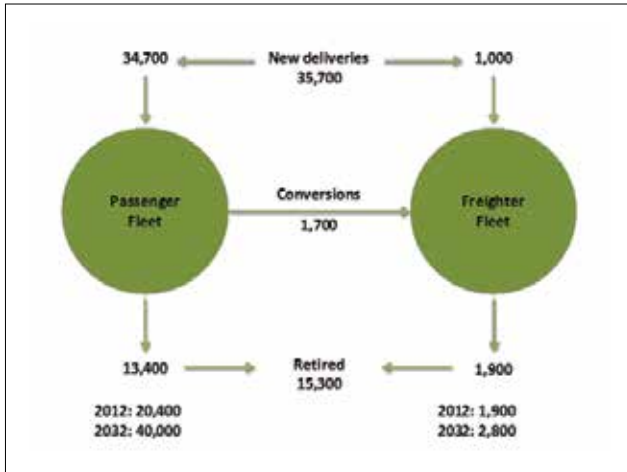
Introduction

Every year, Avolon prepares a World Fleet Forecast that projects growth and changes in the global commercial jet fleet over a 20 year period, including aircraft deliveries, storage, retirements and passenger-to-freighter (“P2F”) conversions.

For passenger aircraft, the resulting capacity is compared to a forecast of annual worldwide passenger traffic demand. The resulting load factors are used to measure changes in operating efficiency and to estimate the level of capacity surplus or shortfall. Freighter aircraft capacity is benchmarked against forecast demand for air cargo and the proportion of the total that is expected to be transported on dedicated cargo aircraft.

2013 World Fleet Forecast Summary

Avolon expects almost 36,000 aircraft to be delivered over the next 20 years, comprising 34,700 passenger aircraft and 1,000 factory-built freighters.

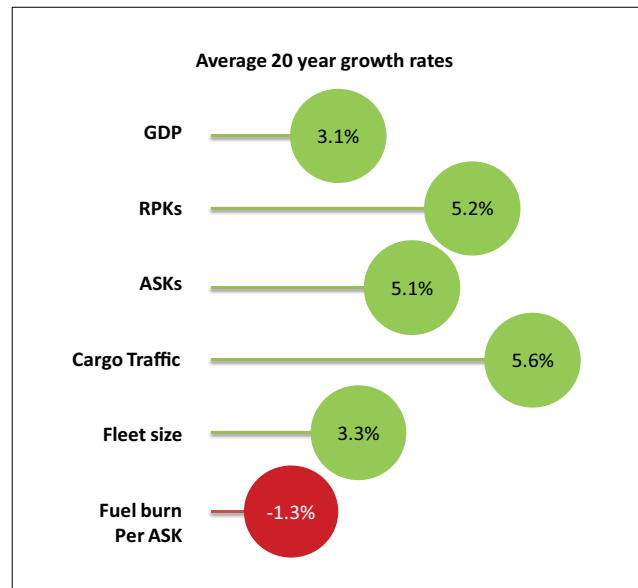


By 2032, the world jet airliner fleet will have more than doubled, from today's 22,000 to 43,000 aircraft, of which 2,800 will be freighters. P2F conversions will satisfy 2/3rds of the additional freighter requirement, which will total 2,700 aircraft over 20 years. More than 15,000 aircraft will be retired over the period, representing 70% of today's fleet. Consequently, around 45% of all deliveries will support fleet replacement, with the remaining 55% representing industry growth.

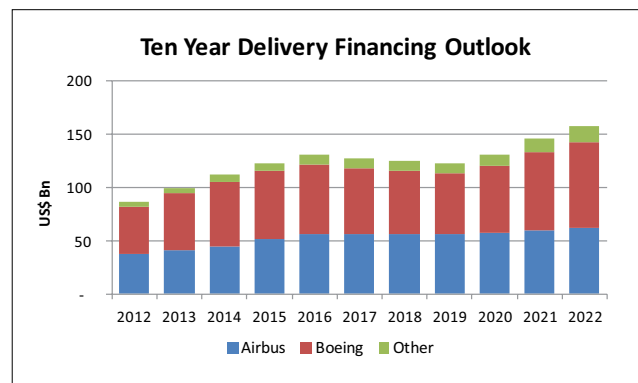


Fuel efficiency is the most significant area of improvement, forecast to improve by 1.3% per annum (over 20% in total), whilst fleet utilisation will increase by 7% and average seat capacity rise by 18% over 20 years.

The industry will continue to secure further efficiencies throughout the 20 year forecast period. Fuel efficiency is the most significant area of improvement, forecast to improve by 1.3% per annum (over 20% in total), whilst fleet utilisation will increase by 7% and average seat capacity rise by 18% over 20 years.



The 20 year financing cost of new deliveries will amount to more than \$3.5 trillion at delivery prices and the annual cost will surpass \$100bn for the first time in 2013, with an average of \$125bn required in each of the next ten years. Airbus and Boeing will continue to account for almost 90% of the total through to the end of the forecast period.



Economic Factors

Assumptions regarding the timing and amplitude of economic and industry cycles are central to the forecast, which assumes further gradual recovery in 2013, with demand strengthening thereafter, building to a cyclical peak in 2015/16. Subsequently, the cycle is repeated over a regular period of approximately eight years. Corresponding cycles for aircraft orders and deliveries follow the same broad trend with lags that reflect typical industry behaviour.

At 3.1%, Avolon's forecast average GDP¹ growth over the 20 year period includes periodic global economic down-cycles.

Demand

Passenger demand, measured in RPKs, is forecast on a global basis. Growth rates closely follow the economic cycle, with GDP highly correlated with demand and accounting for around 2/3rds of the movement in traffic levels. Over the next 20 years, RPK growth is forecast to average 5.2% per annum, underpinned by the strong economic and demographic dynamics of emerging markets, where the new low cost airline business models will increasingly provide affordable travel opportunities to large and expanding middle-class populations.

Cargo demand continues to exhibit much greater volatility and a clear pattern of recovery from the recent downturn has yet to be established. It is also likely that a portion of demand for air freight has been permanently diverted to surface modes as a result of the high cost of fuel and greater efficiencies now available in the shipping sector. Nevertheless, Avolon expects average growth of 5.6% per annum over the next 20 years, albeit off a lower base.

Capacity

Avolon forecasts total industry capacity to grow on average by 5.1% per annum over the 20 years, very slightly slower than RPK growth. Consequently, average system load factor will increase only modestly over the forecast period, to a little over 80%. However, a decline in the medium-term is anticipated as production rates for both single aisle and widebody aircraft complete their current ramp-up schedules.

Airline fleet and network efficiencies help to raise annual fleet utilisation by 7% over the 20 year period. Average aircraft size is also expected to increase, reflecting the efficiencies of operating larger aircraft as markets grow as well as the pressures of airport and ATC congestion in many markets. Average seat count is expected to rise by 18% to 198 seats by 2032. In addition, the introduction of new aircraft types improves fuel efficiency across the world fleet by 23%, equivalent to 1.3% per annum.

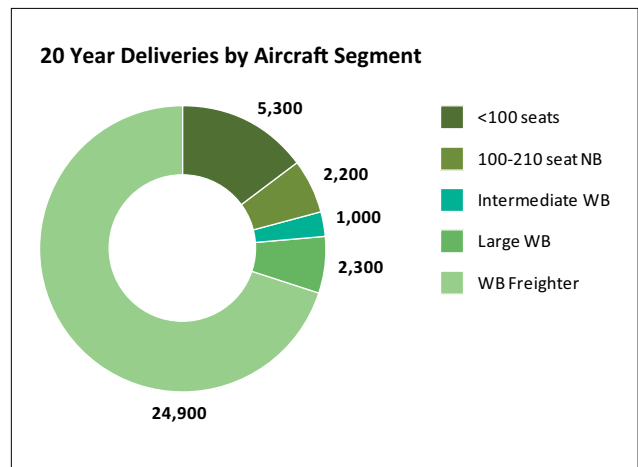
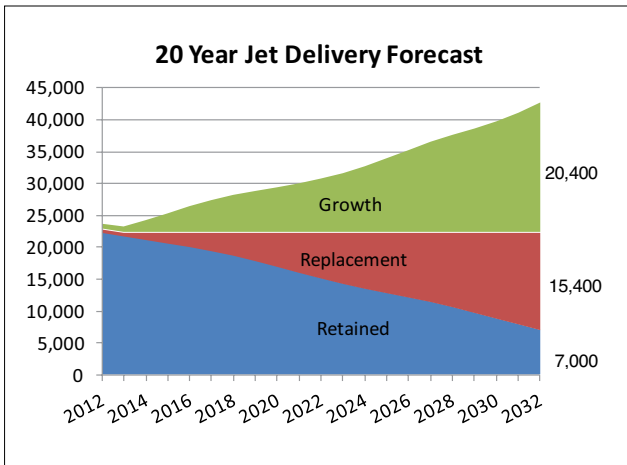
Cargo capacity on all-freighter aircraft is expected to increase on average by 4.5% per annum over 20 years, more slowly than demand, allowing load factors to rise once again.

Aircraft Delivery Forecast

Avolon expects 34,700 new passenger jets to be delivered over the next 20 years, of which slightly more than 20% (7,500) will be widebodies. In addition, 1,000 dedicated freighter aircraft will be delivered, all of them widebody.

Boeing will deliver slightly more aircraft than Airbus during the period (15,000 vs 13,500), and together they will account for over 80% of all deliveries by units and 90% by value. In addition, 2,300 regional jets and 4,700 other OEM's narrow-bodies will be delivered.

Almost 80% of passenger jet deliveries over the next 20 years will be in the single aisle category, including 7% which will be regional jets with less than 100 seats. 15% of deliveries will be intermediate widebodies (A330s, A350s, 787s, etc) and 6% will be large widebodies (747s, 777s, A380s). Close to 50% of the total, and 2/3rds of narrowbodies, will be in the 160-180 seat category, which includes A320s and 737-800s and their replacements.



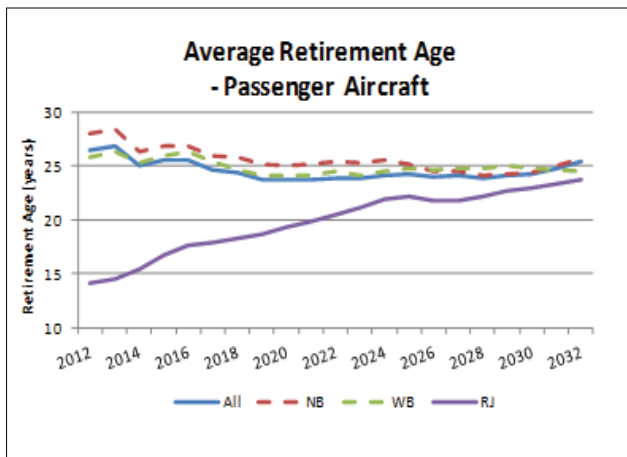
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Retirement and Cargo Conversion

1,700 passenger aircraft are forecast to be converted for cargo use over the next 20 years, 60% of which will be narrowbody types, predominantly from A320, 737 and 757 families.

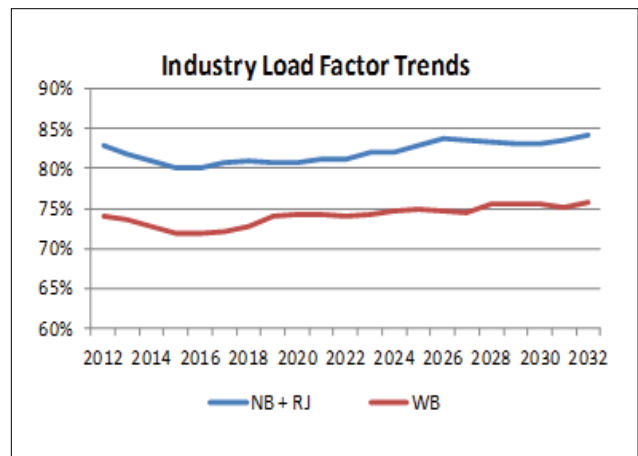
Avolon anticipates that more than 15,000 aircraft will be retired from airline service over the next 20 years, comprising around 13,000 passenger aircraft and 2,000 freighters. Although historical retirements have consistently fallen short of expectations based on aircraft age, the surge of orders placed in the late 1980s will result in a wave of aircraft reaching their normal retirement age of circa 25 years from the middle of this decade onwards.

The average age of the passenger fleet will decline slightly through to the middle of the next decade, but then rise again to return to the current level (10.6 years) by 2032. At the same time, the average retirement age of both single aisle and twin aisle passenger jets trends slightly downwards through to the end of the decade before settling back at around 25 years for both groups of aircraft. The average regional jet retirement age increases steadily from the current sub-15 years to well above 20 years, driven mainly by the change in fleet mix away from 50 seat "pure" RJ models to larger variants such as the E170 and E175.



Load factor, Operating Efficiency & Surplus Capacity

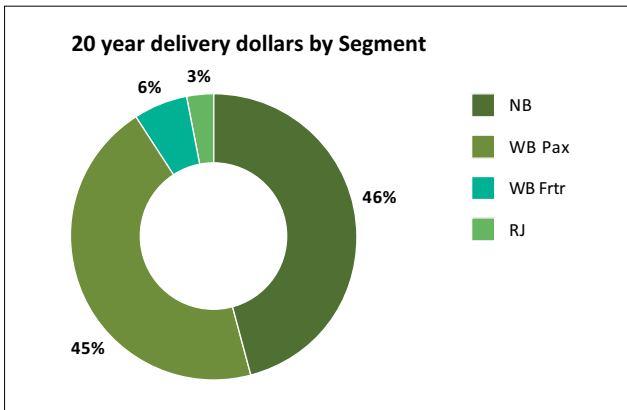
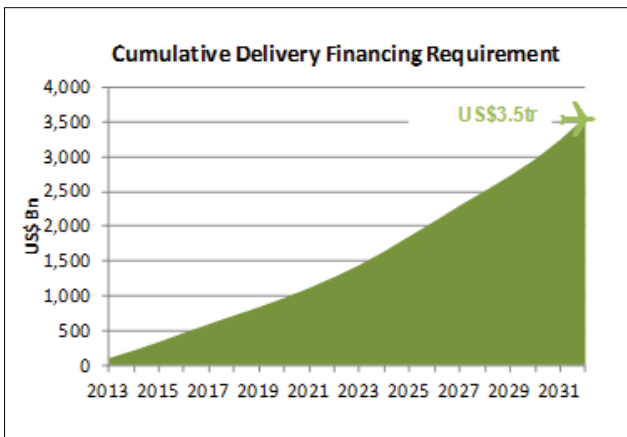
The annual passenger load factors resulting from the forecast levels of supply and demand provide the basis for measuring the level of surplus capacity (or shortfall) in the market. Following recent capacity tightening in response to the challenging market conditions, especially noticeable in the US domestic market, load factors are expected to decline for the next several years as the OEMs raise production rates and the new mid-sized widebodies start to come on stream. However, towards the end of the decade, load factors are forecast to stabilise and begin a steady rise into the mid-80% range again for single aisle fleets and to around 75% for widebodies, with an overall average load factor maintained at around 80%.



Financing Requirements

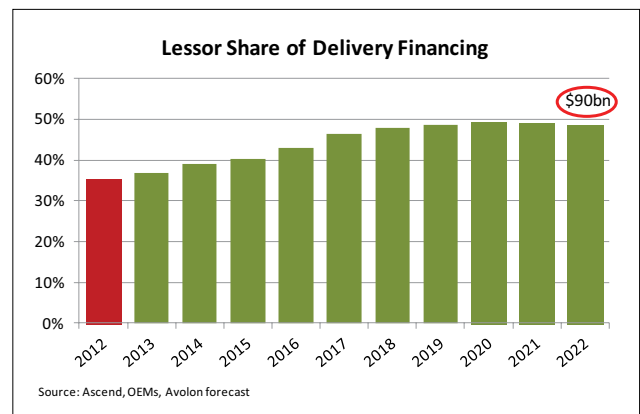
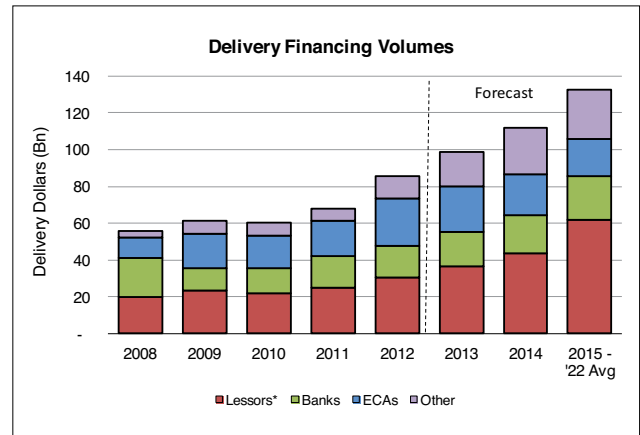
In 2012, new aircraft deliveries required almost \$85bn of financing. Over the next 20 years, forecast deliveries will require \$3.5 trillion in delivery dollars. \$100bn will be needed in 2013, a new record level, and over the next 5 years \$600bn will be required, with the 10 year figure exceeding \$1.25 trillion.

46% of the delivery funding will be required for narrowbody aircraft, with 45% needed for passenger widebodies, 6% for freighters and 3% for RJs.



Avolon expects that the mix of funding sources to finance new deliveries will continue to evolve over the next number of years, with a reduction in the proportion of direct commercial debt and export credit support to airlines and a commensurate increase in the share of support coming from the operating lessor channel and from other sources that will be developed and expanded over the coming years.

Lessors are expected to regain their 40% share of new delivery financing (split between direct orders and sale and leaseback transactions) by the middle of the decade and to thereafter increase their participation to 50% by the middle of the next decade.







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