



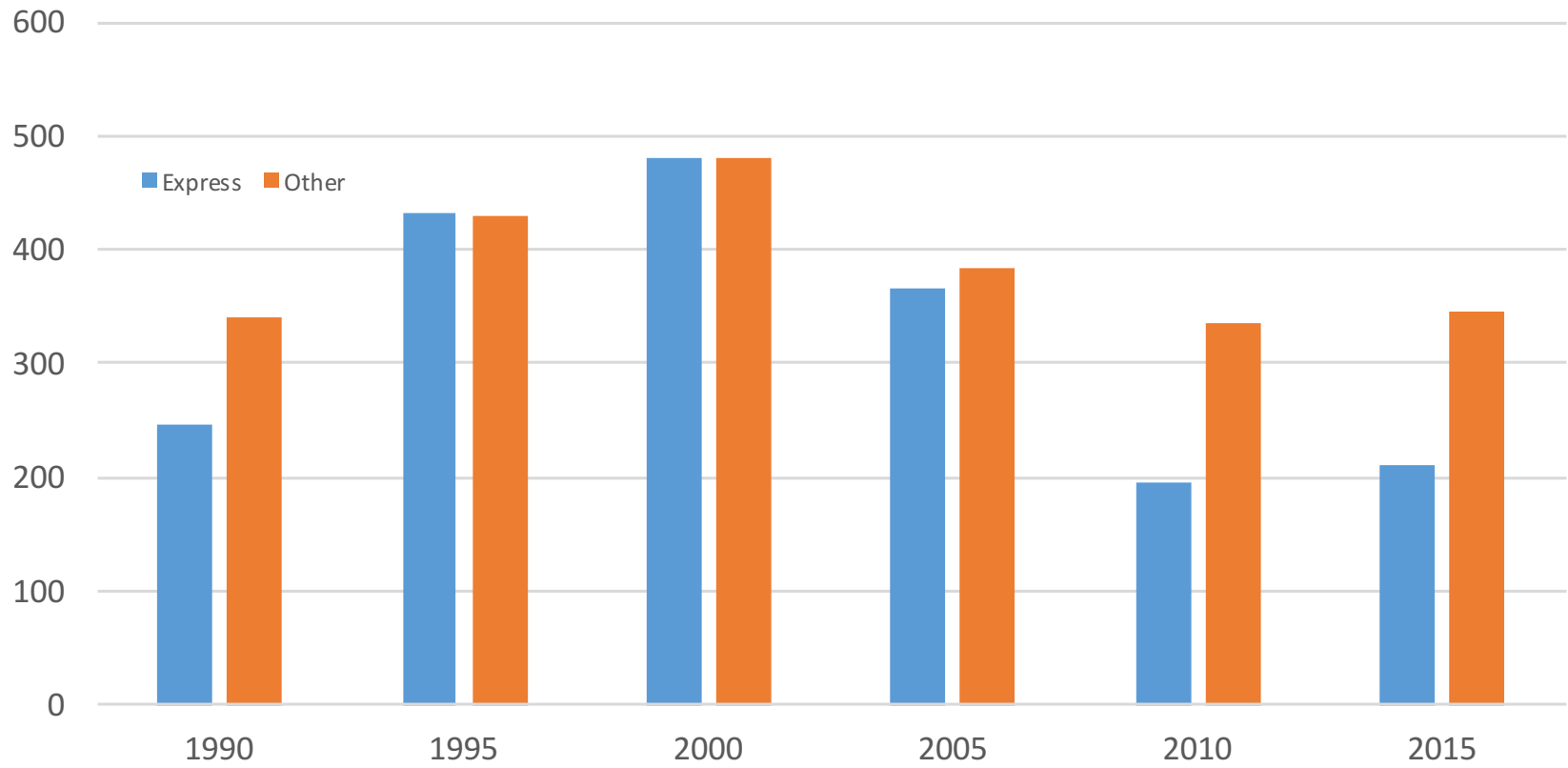
Where is the Narrowbody Conversion Market Headed?

September 2015

The narrowbody (NB) freighter conversion market has experienced higher than average annual production for the last four years with 2015 also expected to be a banner year. A review of historical data combined with the trends in the larger NB freighter markets may indicate what the future holds for the NB conversion market.

Contrary to the commercial passenger aircraft fleet which has risen steadily over the last thirty years, the NB freighter fleet has experienced periods of growth and contraction. In 2000, the NB freighter fleet was 43% larger than in 2010 and, while it has slowly recovered, it still remains 23% smaller in 2015. Two distinct trends created the climate for this precipitous decline. First, a modal shift from air freight to road and rail was driven by express carriers' needs to drive down transportation costs to effectively compete in an expanding, time-definite deferred shipment market. Contemporaneously, express carriers continued to build out regional hubs with the resulting network changes requiring more widebodies and ground transportation, but fewer narrowbodies. Improvements in time definite rail service, satellite tracking of trucks and advances in data management/shipment tracking further added to the benefits of a modal shift from NB Freighters to ground transport.

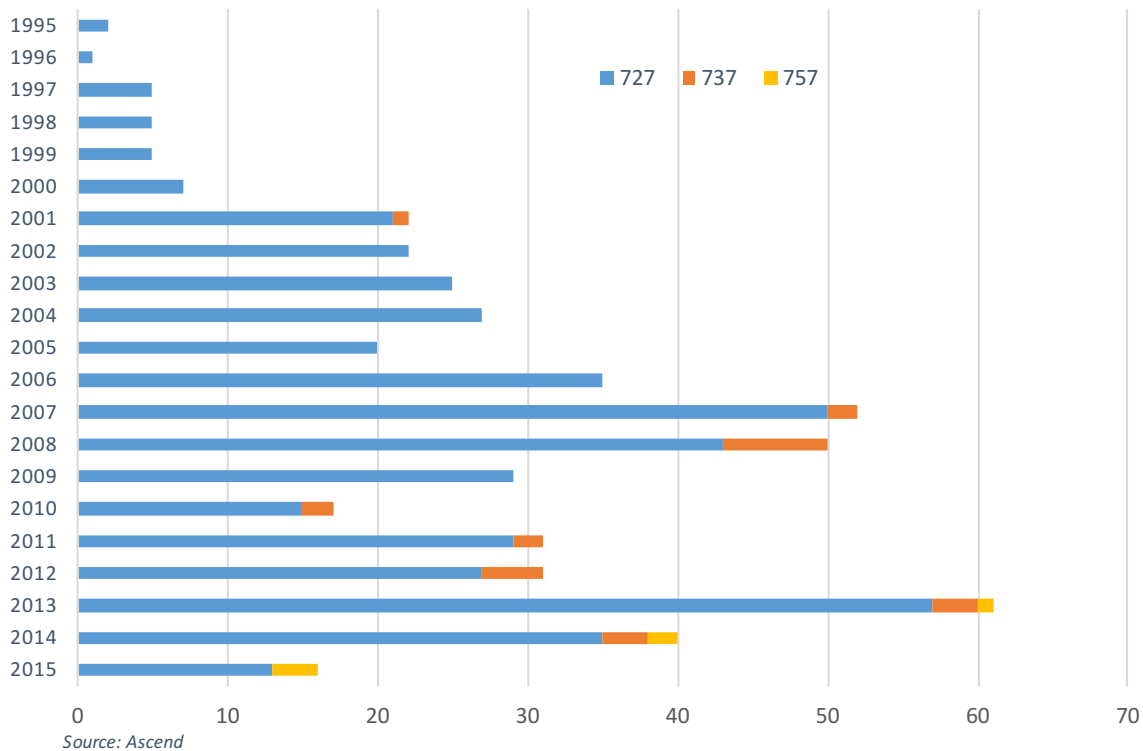
NB Freighter Fleet 1990-2015



Source: Ascend

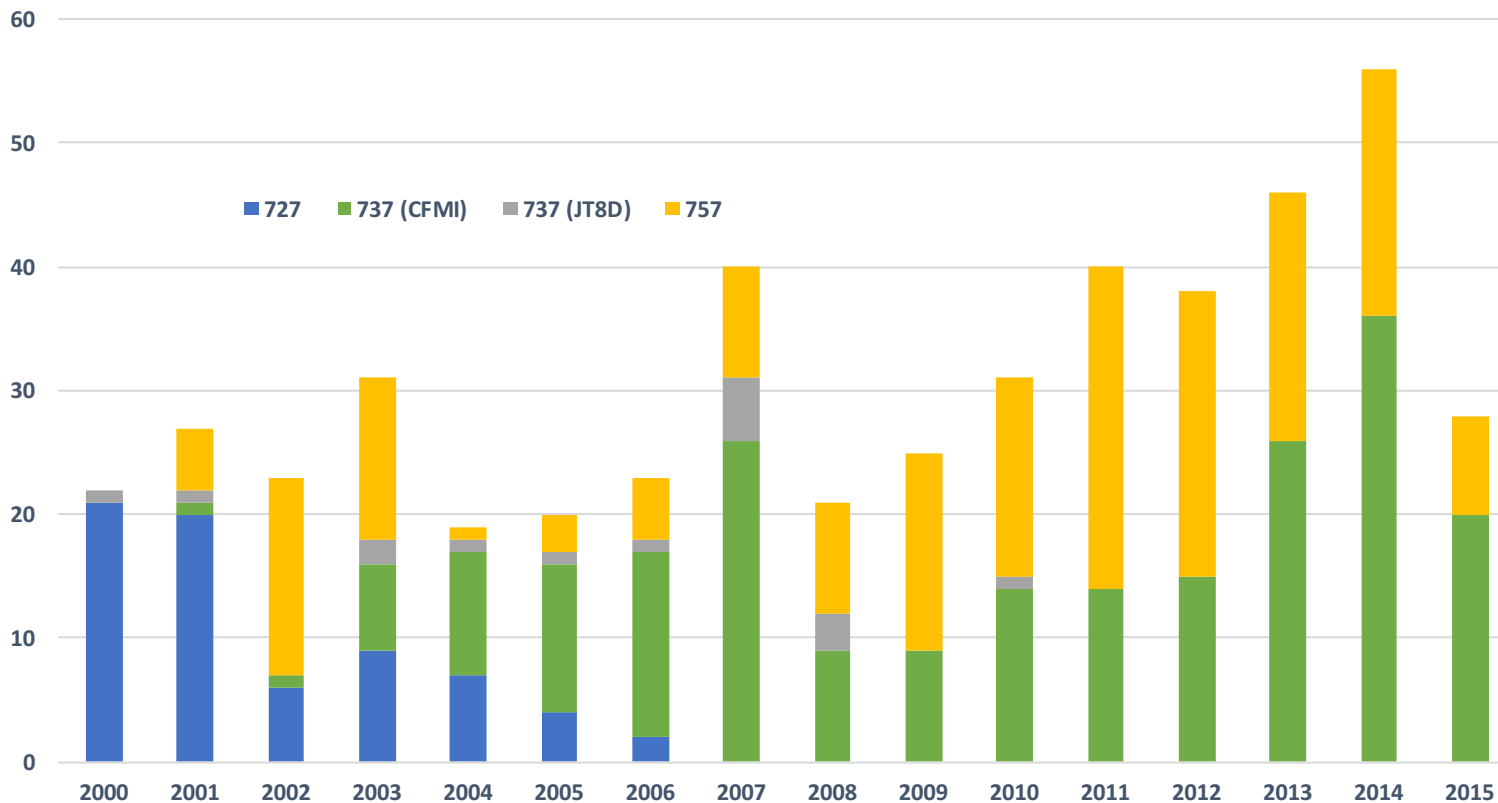
The second trend contributing to the NB Freighter Fleet decline was the 2008 global recession combined with significant retirements. Between 2000 and 2010, over 300 NB freighters representing 35% of the Year 2000 fleet were retired. Aircraft age was the principal cause for the high rate of retirements, however, many operators chose not to replace aircraft as a result of the global recession’s impact on air freight demand. Retirements accelerated after 2010 with 179 retirements occurring between 2010 and 2015. As the air freight market recovered beginning in 2010, sufficient demand existed both to replace retiring aircraft and to service new demand, resulting in a modest increase in fleet size by 2015.

NB Freighter Retirements
1990-2015



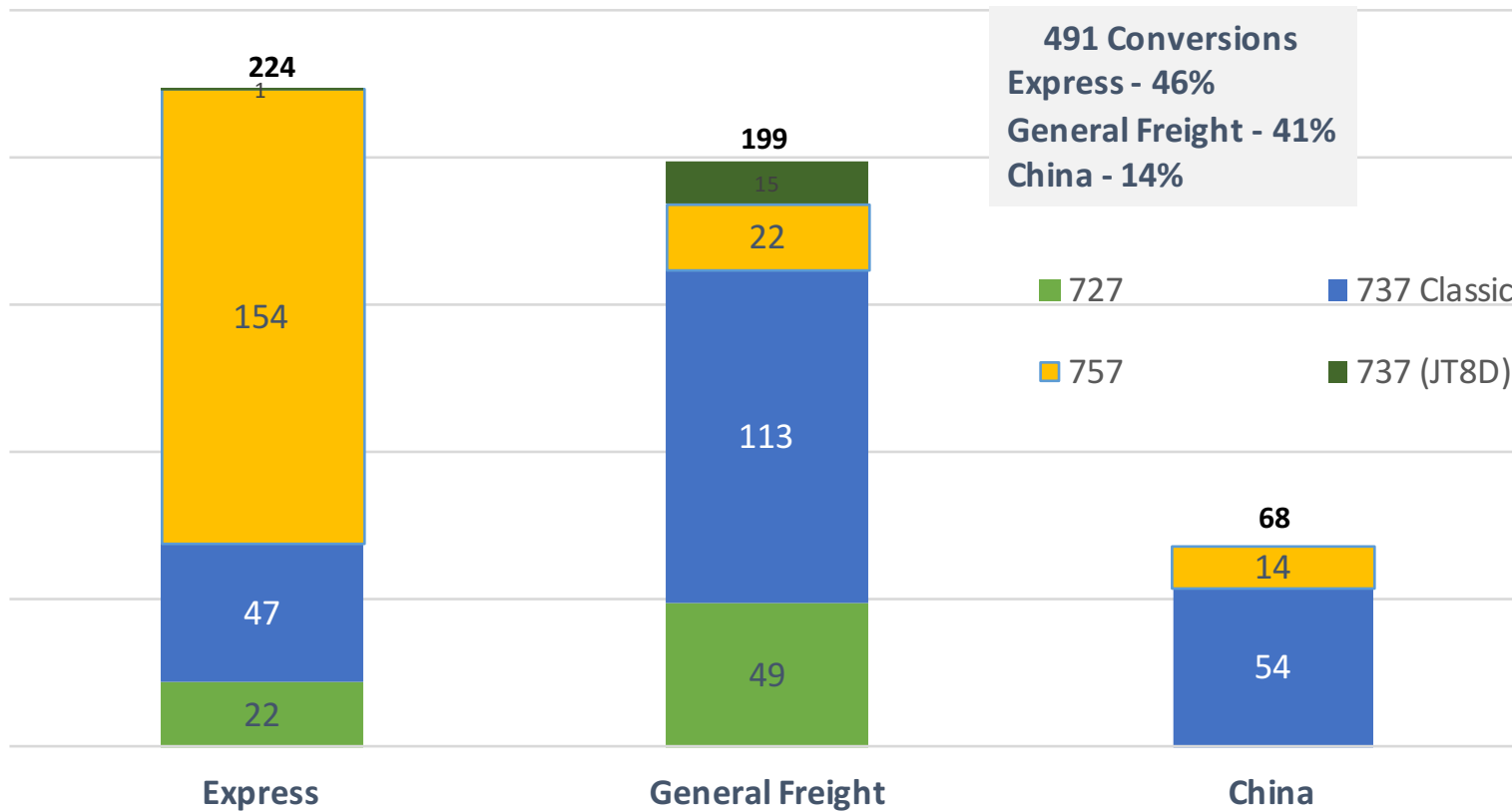
The annual production output of NB Freighter conversions has increased almost threefold since the low point in 2008. The FedEx decision to add 120 or so 757SFs to their fleet was a major component of conversion activity accounting for 1/3 of all NB Freighter conversions during that period. The 737 Classic was not far behind and served both as a replacement for retiring aircraft and to service market growth. As indicated in the chart below, the NB conversion market share was closely split between express operators and general freight with China a small, but increasing element.

Narrowbody Freighter Conversions
2000-2015



Source: Ascend

Narrowbody Freighter Conversions
2000-2015



Source: Ascend

What direction will the NB market take over the next few years? Based on the known and projected fleet plans of NB freighter operators and analysis of previous market activity, the following scenarios should be considered:

- NB freighter demand will experience modest growth through 2018 and then level off or decline slightly as express carrier requirements are met and the replacement cycle runs its course.
- The aggregate express carrier NB Freighter fleets will grow slightly in the next few years and then begin a slow decline due to continuing infrastructure improvements and the need to lower costs. FedEx has almost completed building its 757SF fleet. DHL is replacing its older 757s with newer build conversions. TNT, DHL and other express carriers are adding 737 Classics primarily to service new demand. UPS' intention with respect to its 22-year-old fleet of seventy-five 757-200PFs is a wild card. Should UPS begin retiring these aircraft, it is unlikely they will go to other express carriers or China, but they could displace conversion demand from general freight operators seeking to replace or increase their fleets.
- China will experience a period of strong, sustained growth in NB freighters. As Chinese air freight markets grow, NB demand will eventually favor the higher capacity 757.
- Demand from general freight operators (excluding their sub-service operations for express carriers) will continue to rise primarily for replacement, with a modest increase in traffic, as well.
- AEI's 737-800 launch order from GECAS for up to twenty 737-800 conversions should allow AEI to proceed with its scheduled 2017 FAA certification. However, until a corresponding commitment from an express carrier (or affiliates) or China is in place and/or feedstock values decline (likely 2020 or later), the 737-800 as well as the A320/A321 conversion programs will face challenges competing against the current generation 757SF and 737 Classic freighters

Although the NB freighter fleet is only slightly larger than it was in 1990, there have been plenty of opportunities for the NB conversion providers. They are enjoying strong demand driven primarily by replacement needs as well as a large order from a single operator. This strong market will likely continue for 2-3 years and then experience a slow down before again entering a strong growth period in the early 2020s converting the next generation of NB Freighters.



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