In December last year, Bombardier announced the delivery of the first CRJ-200 Special Freighter (CRJ-200SF) aircraft to launch operator Gulf and Caribbean Cargo. The aircraft was converted from the passenger version by Aeronautical Engineers, Inc. (AEI) of Miami.

“To date, we have received commitments for 45 aircraft conversions from a variety of operators and we fully expect to convert over 100 aircraft over the life of the programme,” said Robert Convey, Vice President, Sales and Marketing, Aeronautical Engineers. “I believe that most CRJ-100SF, CRJ-200SF aircraft will be operated on longer-range regional services with thin demand that require the speed of a jet but can’t support larger narrow-body freighters.”

The regional aircraft market up to the 757 size segment is a particularly interesting one. Precision Aircraft Solutions in Beaverton, in the U.S. state of Oregon currently offers a 757-200PCF (Precision Converted Freighter). Precision has converted 72 aircraft to-date with nine currently in-work.

“We are expecting the market to ‘top out’ somewhere above 135 to 140 757 PCFs,” estimates Brian McCarthy VP Marketing and Sales at Precision Aircraft Solutions. “For the next three years we expect solid orders because there is nothing that replaces a 757 and we have a pretty big value and availability gap between the retirement of 737 classics and the oldest 757s and the availability of affordable 737-800s or A321-200s for that matter,” McCarthy continues.

PCF 757 conversions are known throughout the industry for having the lowest operating empty weight (OEW) and highest available payload of any 757-200 conversion in production today.

Back to the CRJs, the freighter design by AEI includes a large 94 in. x 77 in. (238.7 cm x 195.6 cm) cargo door, hold up to 14,840 lbs. (6,731 kg) of payload on the main deck and offer eight 61 5/8” X 88” pallet positions for containerisation.

“CRJ-100 and 200 jets are the assets upon which regional airlines have built their existence, however they are gradually being replaced in favour of larger aircraft and are finding homes in secondary markets with modifications such as AEI’s freighter conversions,” said David Speirs, Vice President, Asset Management at Bombardier. “We are continuing to

Older 737 freighters are experiencing escalating maintenance and operating costs.

Photo: Kenya Airways

The passenger-to-freighter conversions market has seen significant activity in the past year. Keith Mwanalushi speaks to some of the key players about the latest trends and the new opportunities.
see growing interest in these pre-owned aircraft from both traditional and emerging sectors of the industry.”

“The CRJ-100 and 200 operator base has grown by about 120% over the past eight or nine years, a strong indication of the aircraft’s continuing strength, versatility and appeal,” adds Speirs.

Some years back the concept of Low Cost Freighter (LCF) conversion was being developed. The potential advantage of the LCF approach over conventional P2F process was that it does not have a main-deck door, and the LCF avoids the need to make changes to the external structure of the aircraft.

Refael Matalon, Senior Director and GM for Marketing and Business Development at the Bedek Group feels this kind of method [LCF] is not really efficient. “This is because in order to carry cargo on the main deck you should modify the existing floor beams, change ECS system and reroute new electrical bundles and on top of that you are limited with cargo size due to entrance door dimensions, hence in order to get the maximum payload and cargo size you need flexibility to modify the external of the aircraft and have a standard cargo door,” he explains.

Mike Andrews, Director of Conversion Programmes at PEMCO World Air Services is not convinced with the practicality of the LCF either and believes this approach is simply a concept. “I only see a small market for this. Small volume, small profits,” he suggests.

There is no such thing as affordable air freight; however, McCarthy from Precision believes the LCF concept could be utilised by the right operator. “The absence of a large main-deck door means unique upload and offload techniques and restricted cargo size.”

McCarthy explains that whether the cargo is loaded via specialised hampers or conveyor belts, the process could take longer than traditional containerised/palletised positions on a traditional P2F. He says the up-front cost of a traditional P2F conversion utilising a main-deck door on a narrow bodied aircraft could range between US$3 to 5 million.

“If the LCF requires more down-time and man-power for upload and offload throughout its useful life of say, 10-15 years, this cost would need to be calculated and run against the cost of a traditional conversion to see if it makes sense,” McCarthy continues. In summary, he says the type of cargo carried and the operational needs of the carrier would need to be considered to determine if the LCF is a better choice. “It will take a deep study of the operating costs of say, a light weight 777 and the value, density and volume of the cargo being considered because the LCF loses a certain amount of main deck volume because of the limited pallet position height which is limited by the size of the lower hold door dimensions.”

Some industry insiders have stated that the ‘classic’ freighter feedstock is becoming increasingly scarce and expensive to operate and there is a push to purchase in-fleet next generation aircraft for conversion as they have more attractive economics.

"However, with fuel prices low and stable (for now), it is hard for operators to justify spending many millions more to move into a next-generation freighter.”

Brian McCarthy, VP Marketing and Sales at Precision Aircraft Solutions
“I don’t agree that they are scarce, but they are less available,” declares Andrews from PEMCO. “There are a few more aircraft out there that are good candidates for conversions. There is a push for the next generation fleets, but the small freight carriers are pushing back to order them due to the price of the aircraft at this time,” he adds.

Matalon, from Bedek points out that in order to maintain ageing 737 classics the maintenance cost becomes higher. “This is a major factor in maintenance cost calculation and this is the main reason that we recently found a large interest for operator regarding our 737-700 conversion programme.”

Jordan Jaffe, CEO at Spectre Air Capital has observed that since Southwest Airlines bought 80 plus used 737-700s, this really tightened the CFM56-7B engine market and boosted the 737-700 used aircraft values. “But this, particularly the aircraft value increase, may be short lived.”

With over 1100 737-700NGs and 4300 737-800NGs in the market, propelled by nearly 11,000 CFM56-7B motors, there are going to be plenty of aircraft retired with refurbish able engines, he reckons.

Shifting the focus back to the aircraft, and e-commerce exploding, Jaffe expects to see express freighter demand to be higher than ever. “The opportunity on the 737NGF extends from the fact that the availability of attractive feedstock for classic freighters [737-300/400 and 757-200] is extremely limited.”

Jatte reports that some estimates put the number of “good convertible” 757s at fewer than 52, and the number of 737-400 and 300 candidates even fewer still. “In fact, all but the youngest 737 classics and 757s are already too old to import into major markets, and based on major fleet operators’ retirement plans, there simply aren’t enough classic narrowbody aircraft to support the 50 plus conversions needed each year to support the express airlines and their subcarriers’ fleet needs.”

Jatte does stress that a critical point lost on some airplane investors (but not the carriers) is that 737 classic freighter feedstock is becoming overly expensive for their age, as older 737 freighters are experiencing escalating maintenance and operating costs. He notes that they are also unable to operate in congested areas and meet coming noise and emissions regulations, making them short term solutions at best.

“As such, the industry is looking to the 737NGF to augment and replace the 737 classic freighter and eventually the A321F as the 757’s heir apparent. The problem for some carriers is that 737-700 and 800 freighters will cost more than the older 737 classics they replace for several years to come. This may be an obstacle to fleet growth and modernisation for many operators. This is what Spectre’s leasing arm is designed to resolve,” says Jatte.

By providing operators with modern, efficient 737NG freighters at attractive monthly lease rates, it eliminates aircraft acquisition and project management risks and transfers budget, technical, schedule compliance responsibility to Spectre, he further notes.

Jatte adds: “We think that this de-risking, combined with the higher cash value of 737NG freighters relative to the 737 classic, will result..."
in as much as half of our future narrowbody [737NG, 757, A321] and medium widebody [767-300] freighter transactions being leases.

Most will agree that ideal 737-400 feedstock is among the scarcest of the classics. “I would not label the 757-200 feedstock as ‘scarce’ just yet,” McCarthy observes. “We believe feedstock will be adequate for the next three to four years, and then gradually decrease over the following five to six years.”

It’s no secret that ageing aircraft cost more to operate and maintain than their newer counterparts. Higher maintenance costs and older-technology mean more costs per flight cycle/flight hour. “However, with fuel prices low and stable (for now), it is hard for operators to justify spending many millions more to move into a next-generation freighter.

“Many of these old freighters are owned outright by their operators. The fact that 60 plus 727P’s [source: ACAS] are still in service throughout the world speaks volumes. The operator market has an uncanny way of if waiting for values to fall to rock bottom before they make a move and it usually takes significant maintenance cost rises or fuel pricing to drive them into the next generation of any freighter fleet renewal,” McCarthy stresses.

Looking at the freighter conversion market today, and its influences, Rafael Matalon says the market is devised by leasing companies and operators while the leasing companies are the major players. “The reason is to ‘stretch’ the existing passenger asset life as a cargo aircraft and generate revenue for additional 15 years. A major factor that influences operators to consider converting aircraft, is the asset residual value comparing to the used aircraft market price.”

McCarthy sums up that operators who operate older aircraft such as the 727 and early 737/757 variants probably see that the window of opportunity to convert ideal feedstock for the 737-300/400 and newer 757-200 is closing. “If they choose not to capitalise on this opportunity, they could be forced to operate their older aircraft until next-generation freighters such as the 737-800 and A320/321 become available. The pricing will be a premium compared to today’s MD-80, 737-300/400, and 757-200 on-ramp costs.”

He points to another major influence that cannot be overlooked in P2F conversions - the recent boom of e-commerce. “Atlas and ATSG has been buying and converting 767’s in record numbers to fulfil contracts for the e-commerce giant Amazon. This is on-going and will be interesting to see which other fleet types become the next hot-commodity. Cargo density related to e-commerce players is getting lower and higher volume aircraft are absolutely the new consideration. The 757 is on the front line of this demand and as we look ahead, the next ideal alternative will likely be the A321-200 because of its volume and operating economics.”