The freighter market is vitally important to the aviation industry, and indeed the world’s economy. According to Boeing’s ‘World Air Cargo Forecast 2012-2013’, freight yields have declined at an average rate of 4.2 per cent per year over the past 20 years. Bearing in mind cargo revenue represents approximately 15 per cent of total air transport revenue — with some airlines earning nearly 40 per cent of their revenue from cargo — such a decline represents a real problem for the sector, and by extension, the freighter conversion market.

In order to overcome the challenges brought forth by the economic downturn as well as the ongoing problems associated with ageing aircraft, which a vast amount of freight conversions are, conversion specialists have had to “educate” operators about their services so they can demonstrate how passenger-to-freighter (P2F) conversions such as Precision Conversions’ 757-200PCF will “provide long and lasting value for their business”, says Brian McCarthy, VP marketing & sales at the company.

In order to win and retain business the sector’s key players, such as HAECO (Hong Kong Aircraft Engineering Company) Group, TAECO (Taikoo (Xiamen) Aircraft Engineering), EADS EFW, PEMCO Aviation Group (PEMCO), Aeronautical Engineers (AEI), Israel Aerospace Industries Bedek (IAI) and Precision have had to adopt new processes as well as tools and equipment in order to offer additional benefits such as weight upgrades and winglet approval to customers.

While Precision has seen “a substantial uptick in the interest and movement in the market”, according to McCarthy, it has had to ensure that customers that want to work with freighter aircraft are able to obtain production slots in the next couple of years.

PEMCO describes its turn times as being consistent and predictable, and thanks to its “financial guarantees, unlike other supplemental type certificate (STC) holders” it has made some notable improvements in recent years.

The freighter conversion market was badly affected by the economic downturn and has since suffered due to a decline in freight yields. Yet air cargo traffic is expected to double in the next 20 years, averaging a 5.2 per cent annual growth rate. By introducing new programmes and educating airlines, conversion providers can help the sector on its road to recovery. Hannah Davies reports.
Similarly, TAECO is “competitive in the turnaround time that we offer customers,” says Summit Chan, group director, commercial, HAECO — TAECO’s parent company. The conversion specialist’s MRO capability, which includes stripping and painting, component repair and overhaul carried out by HAECO Group joint venture companies, as well as structural modification and heavy maintenance, typically offers customers a turnaround time between 90-95 days for 737 and 757 aircraft, inclusive of routine maintenance checks. “Interplay between P2F and C-check is managed better so as to minimise maintenance impact on total downtime,” comments Chan.

Precision currently has an average 100 day turn time for its conversions, says McCarthy, “but the length of time is often affected by additional customer maintenance requirements that are accomplished in conjunction with the conversion such as regular maintenance checks or upgrades,” he explains.

According to PEMCO, it has performed hundreds of conversions across 26 different aircraft models and continually strives towards improving the conversion process. “We learn from every challenge and try to apply each lesson going forward,” says Kevin Casey, VP business development at the company. Most process developments are not related to the implementation of new technology, notes Casey, explaining that many are instead “incremental gains in process, sequencing, workarounds, and so on”.

Earlier this year Precision received Federal Aviation Association (FAA) certification for the 10 cargo position/54 passenger 757-200PCC Combi and consequently won a contract for four of the freighters with Air China Cargo. The order not only signals a move from widebody freighters to narrowbodies for the cargo airline but also marks a change in focus to more domestic-based operations; the 757s will be used for China Postal Airlines.

The company is also in the process of marketing its engineering services, Precision Engineering, which offers “comprehensive engineering skillsets and production capabilities”, says McCarthy. With business on the rise it seems like conversion providers are fighting against the slow growth that the sector has been subject to since the downturn in 2008.

HAECO has enjoyed some notable achievements of its own, having just completed its 100th freighter conversion, which was scheduled for re-delivery to the customer in late October 2013; a 737-300PTF using PEMCO.

According to Precision, the main goal with a conversion programme is to provide a “steady and predictable flow of business”, which allows for a “smooth transition of the labour force from one aircraft to another”, explains McCarthy. Similarly, in a bid to improve conversion processes, TAECO has been working “very closely with its STC partners on conversion process optimisation and improvement. These also involve the introduction of new tooling and equipment,” says Chan.

Conversion providers invest “heavily on the front end of the programme (from a design perspective) to gain efficiencies”, says McCarthy, and marks a change in focus to more domestic-based operations; the 757 will be used for China Postal Airlines.

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throughout a programme, Precision adjusts “any design attributes that achieve additional efficiencies for customers”. In addition, the company has added weight upgrades to its 757-200PCF for both Rolls-Royce and Pratt & Whitney powered models, as well as gaining winglet approval. According to McCarthy these tasks alone give more than 50 additional models of this kind a “potential life after passenger service”.

Surviving the downturn

“The downturn affected all facets of the business from accessing capital to purchase and finance aircraft conversions to simply a reduction in the cargo market overall,” states McCarthy. However, Precision was able to escape the downturn relatively unscathed thanks to developing a “scalable” business model, which saw it produce four or more conversions each year during the downturn with little effect on business.

Admittedly, there were some challenges to face along the way for all in the market and McCarthy says that one of the biggest was to match the “appropriate operators with the aircraft at the right time”, hence the need to educate customers about conversions and aircraft performance.

AEI claims to set a “new standard of 737-400SF conversion” with its 10 full-height AAA containers plus one additional half container. Through maximising its main deck ULD capacity with an 11-pallet configuration, AEI is proactively increasing its revenue. AEI holds more than 120 STCs and has placed over 350 aircraft into service, showing that the sector is, despite the downturn, remaining off ground.

PEMCO claims to have only been “minimally” effected by the downturn: “Our 737 products are a good fit for developing economies which were less affected by the global economy pull back,” explains Casey. As a result the company’s P2F programme “remained busy right through the downturn”, and 2012 saw demand for its 737 products reach a “historical high”, he adds.

However, Chan points out that “the demand for 747-400BCF from customers decreased” during the downturn. To overcome such challenges, TAECO decided to “focus more on narrowbody P2F work requirements and develop its technical capabilities”, he explains.

However, the downturn didn’t have too much of an effect on PEMCO’s success, the company, which is currently focusing on 737-300 and -400 freighters, QCs and combi conversions, optimised and in some cases regionalised its supply chain to meet demand, which helped to further control costs.

In fact, during the downturn, the conversions provider was able to add more installation capacity by allocating more hangar space to P2Fs, as well as training new P2F crews and expanding its production sites. In addition to expanding its ca-
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Capabilities in Tampa, Florida to three lines it also increased its North American capability; PEMCO has three lines running in Asia and an additional site in Coopesa, Costa Rica, which has its first P2F in progress.

Programmes going forward

HAECO is currently focusing on 737-300/400 PTF and 757-200 PTF, however it is exploring the possibility of “taking part in new aircraft type freighter conversions”, says Chan.

TAECO, which began its first freighter conversion for Air China Cargo, on one of its 757-200 aircraft in July, predicts that the next major programmes for freighter conversions will be the 737NG, 777 PTF and A320 models. Precision agrees, stating that the 737NG and A320 programmes will show “some promise” in the next decade. But the “drivers for these programmes will be dictated by aircraft availability, pricing and economic demand”.

PEMCO predicts that the 737 Classic and 757 will see the greatest quantities of conversions (in the range of 180 aircraft) over the next four years. According to a recent industry suppliers’ conference, between 2013-2017 there will be 202 total narrowbody conversions (and 74 widebody) with the majority being 757 or 737 (CFM powered) models. This research suggests that going forward 737-300, 737-400 and 757-200 models are the most favourable airframes, while the 737-200, 727-100 and 727-200, will become less popular.

Boeing has most recently completed a transition of two MD-11 Boeing converted freighters (BCF) on multi-year leases to AV Cargo. The BCFs feature an updated flight deck and cargo-handling system, better fuel efficiency and increased operating capabilities. “Conversion extends the aircraft’s useful life beyond its passenger service and, thanks to the superior economics and operating performance, it allows us to place into service a good cargo asset despite a soft market,” explains Frank Duckstein, senior director of asset management at Boeing Capital.

Future demand and outlook

The International Air Transport Association’s (IATA) ‘Cargo E-chartbook’ for Q2 2013 echoed that of other reports; “operating conditions for airline cargo businesses deteriorated over recent months, but the outlook looks a bit more positive. Over recent months airlines saw air freight volumes stall, load factors weaken and yields continue the steady decline seen over the past two years.”

However, “current levels of business confidence continue to indicate a modest pick-up in economic growth this year, and consumer confidence in Europe and the US has made some progress, both of which should provide support to air freight demand in the months ahead”, IATA concluded.

While the global economy has not been robust, Precision is “cautiously optimistic” about future opportunities for freighter conversions, because as a company it has “steadily gained in strength over the last few years”, says McCarthy. He foresees that most demand will come from regions such as China, Russia, the Middle East and the EU. “Due to the distance and payload requirements to/from and within these regions, the 757-200PCF makes perfect economic sense for most operators,” he explains.

PEMCO sees developing economies and manufacturing hubs, which lack suitable surface transportation solutions, as a strong route of demand, and highlights Asia, South America, Eastern Europe and Africa as regions that represent the highest demand and potential for future growth.

“Future is bright for freighter conversion but the competition is fierce,” says Chan, but by working closely with partners and airline customers, HAECO is confident that it will maintain “a leading position in the freighter conversion market”.

“Despite the near-term slowdown, world air cargo traffic will more than double over the next 20 years, compared to 2011 levels, for an average 5.2 per cent annual growth rate,” says Boeing’s report.

If the recent cargo reports are to be believed “the number of airplanes in the freighter fleet will increase by more than 80 per cent over the next two decades”, which highlights the expectations for growth within the cargo business.