



LUFTHANSA

Decision time

The last two years could be described as the time of forecasts and hopefully 2018 will go down as the year of decision when it comes to component repairs. The global commercial fleet is forecast to grow to 45,000 by 2035, meaning an additional 22,700 aircraft will need to be maintained and repaired, some 10,500 of them in the Asia-Pacific region alone. **Michael Doran** reports.

THE TIME HAS ARRIVED TO MOVE FROM FORECASTS TO DECISIONS, to confront the reality that the Asia-Pacific fleet will almost triple in size by 2035 and the option to have all these aircraft maintained offshore will not be available. As Tom de Geytere of AJW told AAV: "Today's MRO capacity will not be able to service the growth in the next few years and with only around 20 percent of component repairs being done in the region, there must be growth in the facilities available to do the work."

By definition, the markets for components, component MRO, parts and consumables are often intermingled, leading to a confusing picture of what is the dollar value of this segment is and who

the key players are. In 2016, consultancy ICF estimated the global components market demand at US\$14.9 billion and Asia-Pacific's share of that at around US\$4.5 billion. De Geytere of AJW puts the global value at US\$15 billion growing to US\$22 billion in the next decade. Canaccord Genuity analyst Ken Herbert values the global commercial transport material market at US\$30 billion with around US\$12 billion of that classified as sold through the distribution market where he identifies Boeing's Aviall and Airbus company Satair, controlling around 50 percent of the segment.

However, de Geytere told AAV there is an important distinction to be made between initial provisioning and ongoing component

◀ *A technician examines a circuit board at Lufthansa Technik Shenzhen.*

support. He said: "Airbus and Boeing have parts companies they use to provide the initial parts inventory to customers buying an airframe which is why these companies have large order numbers but does not mean they do the aftermarket support as well. We have client airlines that have received components with the aircraft which we have purchased and provided the airline with a power-by-the-hour agreements."

Whichever way their business model is defined, Aviall and Satair are major players in the industry and in markets where there is a preference for OEM manufactured parts, such as in China, they are in a strong position to capitalise on their unique positions. Both Boeing and Airbus have stated their intentions to grow their services revenues and are packaging power-by-the-hour agreements into aircraft sales taking control of where the needed components will come from. As to how they will exercise this market power remains to be seen as does the attitude of operators towards becoming over-reliant on a one-supplier situation.

Whatever the numbers are, the inescapable fact is that it is big business and it is going to quickly become even bigger, especially in Asia-Pacific. AAV spoke with organisations operating at three levels of the market with differing structures about their ambitions for the future in this region.

The first of these was Burkhard Pfefferle-Tolkiehn, vice president for component services Asia-Pacific at Lufthansa Technik, who is based in Hong Kong. He opened with: "The component market in APAC is growing fast and with increasing spare parts prices, especially on new aircraft types, operators are putting an increased emphasis on securing a reliable, efficient and cost-effective component and repair and supply solution." In looking at regional growth, he said that there is growth in all market segments and it was important to have the right product in place for meeting differing needs for different customers, from single repairs to tailor-made power-by-the-hour that include asset and logistic management. "At LHT, we have adopted a more regional strategy to our business. We are present in Asia not only with repair solutions via Lufthansa Technik Shenzhen and our global in-house MRO network, but also with our regional warehouses, logistics solutions as well as our sales and customer service teams." He said that the new regional set-up was contributing greatly to their success and that the gaining of material supply contracts covering over 100 new A350 aircraft and the expansion of the Hong Kong facility reinforces their regional commitment.

After little more than a year, Lufthansa Technik Component Services Asia-Pacific has grown to over 300 employees located in Singapore, Hong Kong, Shenzhen, Japan, the Philippines and India. "The growth of our supply chain in APAC went hand-in-hand with the growth of our material and by now LHT is able to supply the ma-

majority of material requests from APAC from warehouses in APAC for all commonly operated aircraft types." LHT now has more than 500 aircraft from 30 customers in the region under long-term exclusive contracts for component services and company-wide it overhauls some 300,000 components annually.

Operating with a helicopter-like presence over the components industry is AJW, a team of 700 aviation professionals serving more than 1,000 customers flying 12,000 aircraft in 117 countries and over US\$500 million of inventory on hand. AAV interviewed AJW's chief sales officer, de Geytere, on what is happening in the components industry with a particular emphasis on Asia-Pacific and AJW's plans in the region.

He said that the total component repair business currently stands around US\$15 billion and will grow to around US\$22 billion in the next decade and while these figures are well known he has a strong view that the most important factor is the distinction between widebody and narrowbody aircraft growth and the effect that will have on component services. He pointed out that "widebodies are 20 percent of the fleet but consume 40 percent of total MRO spend and narrowbodies account for 50 percent of the fleet and 50 percent of MRO costs."

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TOM DE GEYTERE, AJW

The biggest change will centre on the A350 and B787 that he calls "step-change platforms that are radically different and revolutionary that will fall under significantly higher control of the OEMs and facilitate OEMs and MROs forming partnerships to meet MRO demand. Some say this is radically going to change the whole industry, but de Geytere said "you are (only) talking about maybe 3,000 aircraft out of more than 30,000 in the global fleet"

For AJW the focus is on the narrowbody market making up around 65 percent of the fleet and benefiting greatly from the emerging Airbus Neo and Boeing MAX products. He describes the newer narrowbody aircraft as evolutionary, a very "vanilla business" and moving into the A320neo aircraft has been a natural evolution for AJW. He says, "Even in the start-up phase of the platform an independent provider like us is already present."

Turning to the power-by-the-hour (PBH) markets, he sees AJW as being a step ahead of the OEMs because of their component MRO facility and how that gives them a deep understanding of the component repair process. He points out that AJW recently signed an agreement with Bombardier to manage all repairs for Bombardier's rotatable inventory on Learjet, Challenger and Global series aircraft. Working with aircraft OEMs is not a new experience for AJW and is a relationship they see as both "collaborative and competitive". Christopher Whiteside, AJW's chairman, said that AJW could very



▲ *AJW's main warehouse and logistics centre.*

well do rotatable management for other OEMs and a key objective is "developing relationships with all of them."

The importance of Asia to AJW is evidenced by having inventory in 15 locations across the region with de Geytere based in Singapore. He is very clear on the need for components services to increase to meet even the existing demand locally and that it is "inevitable that AJW will have a bigger footprint in the region" and that "the palette we are painting with has three elements — a mix of our own MRO, regional MROs and the OEMs and we are looking at opportunities to grow in this region."

A different model again is UK independent company Bii, which, while being smaller in scope than LHT or AJW, has begun to penetrate the Asian market with a number of new customers in a region they see "as one of the strongest growth markets currently available." This success has led to talks to open an office in Singapore with warehousing in the region and CEO Francis Cradock told AAV that "Bii has observed how much the commercial parts industry is thriving and we are now seeing an increase in airlines relying on stockists of aftermarket spares. We believe that airlines are increasingly choosing to use second-hand parts because it is a cheaper option for them and that OEMs are beginning to open trading offices as the demand for repaired material is so high."

Bii has been trading in the aviation sector since the 1970s and has a solid track record, particularly in India, Pakistan and parts of Africa where it has used its flexible approaches to help fledgling and start-up airlines literally get off the ground. As with Lufthansa Technik, Bii see that holding stock in strategic locations is a big factor and having their main warehouse adjacent to Gatwick Airport means they can quickly get parts anywhere they are needed at "fair and competitive prices." The company is focussed mainly on Boeing and Airbus stock and has made significant investments to take on materials on consignment from airlines, OEMs and lessors as a source for their saleable components.

Cradock said: "We can now provide an Asian start-up with a comprehensive advance exchange programme from our rapidly expanding 737NG pool for its 737-800 fleet."

On the subject of second-hand parts or used serviceable material (USM), ICF have forecast that this market is worth around US\$4.5 billion and set to grow to US\$7.7 billion by 2026. An interesting by-product of USM is the impact it is having on aircraft scrap values where "airlines are embracing the cannibalisation of their own aircraft, then using the rotatables to reduce the cost of future maintenance or the engine parts to lower overhaul costs," said ICF principal Richard Brown.

The introduction of next-generation aircraft is not the only change for the components industry with the growing utilisation of 3D printing or Additive Manufacturing (AM) something else to be considered. Pfeifferle-Tolkiehn from Lufthansa Technik told AAV: "We rather see it as an opportunity for us and we have been investing heavily into innovation around additive component manufacturing. Using 3D printing is another technological option for us and we think that MROs have a competitive edge over OEMs in this, given we can leverage our life-cycle knowledge to produce more enhanced repair versions. Overall LHT has quadrupled our investment in innovation in the past five years from 50 million euros to 200 million euros by the end of 2018."

De Geytere of AJW introduced a new dimension to the discussion when he raised the issue of leased aircraft when he said: "About half the global fleet are in leases where certain provisions in the lease toward re-delivery and during the operation of the aircraft mean that the lessor does not allow non-OEM components to be fitted on the aircraft during normal operation." A second complication arises in PBH pooling arrangements, but he believes that again this is an issue only for the new widebody aircraft and that eventually the OEMs will licence 3D manufactured parts out to certified MRO organisations to be repaired.

It is revealing to see that Airbus-owned Satair also identifies issues with the AM certification process and is calling for a new perspective to make it more suitable for the spare parts business. Satair says "a core group with specific skills to handle the impacts and requirements of a change in the design and manufacturing process to AM will need to be involved to shorten the critical certification time." It is easy to form the conclusion that Satair wants to use AM not only on next generation widebodies but also on the rest of the Airbus fleet that, in the main, has been built without using AM techniques, a similar point to the one made by Tom De Geytere on the AM issue. ➔