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A balancing act



AFI KLM E&M has a vast network of repair workshops.
Patrick Delapierre

Keith Mwanalushi examines the aircraft component repair and supply sectors, the opportunities, and challenges amidst Covid-19 and navigating through irregular demand cycles.

Prior to the Covid-19 outbreak industry figures suggested that by 2030, the global component MRO market would be sized at approximately \$23.1 billion with additive manufacturing, 3D printing and the use of PMAs and DER repairs all playing significant roles in the market.

Managing supply and demand in times of crisis

The current downturn related to Covid-19 has seen a business shift towards air cargo and niche operations and seemingly parts supplies are moving in to support this. Over these last two months or so demand has been limited, observes Martin Ward, Director of Material Management and Supply Chain at Vallair. He anticipates this will change the more hours and cycles the freighters put in. "As tough as these freighters are, they will need parts soon. They have been used non-stop for the past few months, so it is inevitable that parts supplied-on-demand will start-up again soon and Vallair is ready for that."

Ward says Vallair has been able to take stock of parts inventories and streamline its services in readiness to react comprehensively, when operators' demands come flooding in.

Benjamin Moreau, SVP at Air France Industries KLM Engineering & Maintenance (AFI KLM E&M) Components Product also sees that customer needs have shifted during this period but the fundamentals remain the same, and the company has maintained a large inventory to support any request, multiple logistic solutions and a reliable repair supply-chain. In times of irregular demand cycles Moreau feels that forecasting parts supply demand is well and good but also requires complementary work to

adapt to last minute changes, unpredictable needs, or new expectations. "Despite the considerable constraints that the whole industry faces in this time, our teams remain fully mobilised during this period." He states.

Bii.aero which provides aerospace parts and services for commercial aircraft has been rather fortunate because they have supporting such operations [cargo] historically. "We are seeing demand increasing in some of these areas though this is only slightly in terms of the macro demand," notes Justin Blockley, Commercial Director – Bii.aero. "The downturn has put added stresses on areas which are not obvious initially. For example, with many component MROs closed or implementing very tight payment terms, we are reliant on our serviceable inventories to fulfil the need of our customers."

In terms of managing the forecasting of parts, Blockley argues that it is a case of how wrong their predictions can be. "We are processing some very comprehensive reports from large reputable companies, however we feel no one is able to accurately predict the recovery phase till such time as the full pandemic global recovery is better understood. We are relying upon historic demand trends and failure modes at component level, overlaid with



Justin Blockley, Commercial Director – Bii.aero



Karolis Jurkevicius, VP Landing Gear Trading and Leasing at APOC Aviation

feedback Bii.aero is receiving from our customer base.”

Blockley reminds that each country and region is noticeably different in this regard, but however, since many of Bii’s customers are long-term partners, the company is in a privileged position of having accurate data first hand. “We do feel that new gen aircraft which have yet to be delivered will not be required as early as first thought, especially with the current oil price keeping fuel prices suppressed,” he says.

At APOC Aviation Karolis Jurkevicius, VP Landing Gear Trading and Leasing feels it is a “mission impossible” to forecast demand currently as it all depends on current needs (AOGs basically).

“However, we expect some increase on parts supply as there are likely to be unscheduled maintenance programmes from airlines and lessors who want to be ready for the day Covid-19 lockdown is lifted,” states Jurkevicius.

At AJW Technique in Canada, Sajedah Rustom, CEO says some customers have changed the nature of their services to support cargo also in light of Covid-19 industry impacts – “We have offered discounts and promos to such operators to help manage their needs and financials. One such example is our quote and hold programme which allows operators to send repairs into AJW Technique for quote assessment, but then hold the repair until they have a demand, after which we can push the component through the repair cycle and bill the customer accordingly.”

Rustom says AJW has made adjustments for their power-by-the hour customers, offering them flexibility on minimum hour payments, whilst accessing preferential terms on parts and repairs in a pay-as-you-go style arrangement. “Flexible programmes such as these allow AJW Technique to support operators with changing missions and flight patterns, especially when cargo operations are so critical to the worldwide supply chain and sustainability.”

AJW Technique has invested expertise in streamlining shop floor processes ready to further digitalise operations, including a focus on predictive parts planning and fulfilment. “We use Kanban to manage material flows and these models automatically adjust to account for sales volume variances.”



Sajedah Rustom, CEO, AJW Technique

Rustom adds that AJW has adjusted algorithms to reduce auto-provisioning in line with their daily, weekly, and monthly sales outlook and budgeting tools. “Presently, we are closely watching the changes in customer behaviours around scheduled and unscheduled repairs, watching for any emerging trends and pivoting accordingly. We work closely with our vendor base which includes the major OEMs to proactively monitor parts requirements daily and have shift-

ed to a more just-in-time focused methodology and mechanism of cooperation together.”

At Aircrafters Inc, in Delaware they have tried to get ahead of the daily demand changes that the customer base is going through. As a Collins Master Distributor for wheels and brakes the company frequently reviews its available inventory to support MRO customers who are servicing cargo operators. “In turn we adjust our order book to ensure a constant supply is available. We also support operators directly that move freight and have increased our assembly exchange pools accordingly to make sure they have a readily available units to draw from,” states Greg Coffield, VP and General Manager.



Greg Coffield, VP and General Manager at Aircrafters Inc

During irregular demand cycles Coffield says at Aircrafters this has turned out to be in line with how they increase exchange volume’s based on which season they are heading into and then adjust min/max levels accordingly – “For the unfortunate dip in passenger flights we have gone to a 20% of minimum for stock and for our cargo operators its roughly a 20% on top of maximum for winter surge.”

Aircrafters had over 250,000 parts and assemblies flow through their New Castle, Delaware facility ultimately shipped to over 60 countries. “We take pride in shipping same or next day for 95% plus of the orders we receive and that the CoC’s, 8130’s and strip reports are all correct. We also like to think of our quality inspection checklist as a living document that we will routinely improve upon for different customers as their requirements may change,” Coffield continues.

François de Larambergue, Head of Engineering, AOG Desk and Procurement at Spairliners GmbH reckons a major challenge currently is getting slots on cargo flight to send parts where they are needed considering the restrictions with regular commercial flights. “Thankfully, we do have pool hubs in strategic locations around the globe that are very well stocked with parts. This proximity to our customers helps a lot to overcome some of the greater logistical challenges that we are currently facing and allows us to serve them as quickly as possible.”



François de Larambergue, Head of Engineering, AOG Desk and Procurement at Spairliners

Mr de Larambergue says the Corona crisis has completely changed airline operations to the point where there is no regular usage of components. “Many parameters of our supply chain have drastically changed over the past few weeks.

“We observe that hard time items are still requested, but flight hours and flight cycles related items are postponed, and storage related components need to be actively managed. Our engineering department, in cooperation with the airline’s engineering teams, have adjusted the parameters of our customers’ asset forecasting systems to better



Aiste Maciulyte Kavaliauskiene from Magnetic MRO

match the current requirements, but we need to continuously and closely monitor the development in order to ensure optimal and investment-efficient results," he explains.

At Magnetic MRO, Aiste Maciulyte-Kavaliauskiene tells this publication that the current downturn decreased the demand for parts in general but as cargo airlines move in Magnetic are focused on helping them. She observes however that this 'new demand' does not guarantee the type of turnover that would be expected

by the passenger aircraft market. She says many of suppliers moved their attention to other parts suppliers, who are trying to get the best from the current situation and purchase parts with a lower price for their stock for resale to airlines when the market recovers.

Mike Cazaz, President and CEO at Werner Aero Services highlights the importance of being dynamic and ready to make changes as needed, sometimes daily, in times such as these. "We watch the market, movement of aircraft, airlines' operations and make decisions and adjustments based on forecasted aircraft utilisation. That is a key element that we use, in addition to communicating with our customers daily and learning about their short-term plans. This knowledge helps us predict demand and potentially future supply of parts in the market," he says.

Ensuring consistency in repair strategies



Mike Cazaz, President and CEO at Werner Aero Services

MRO's, repair shops and OEM specialists are rigorously benchmarked to ensure absolute consistency in terms of repair quality. "It is of course, up to the customer to measure the MRO's reliability to reduce long term costs and potential breakdowns," says Cazaz adding that relationships and loyalty between customer and supplier are just as important, especially during these times of Covid-19. "Loyalty does breathe consistency, dependability and experience," he comments.

At AFI KLM E&M the quality of repair of aircraft components is integrated into the processes but also into the culture of teams and management. "It is always associated with the fundamental of flight safety," says Olivier Boina, AFI KLM E&M Head of Industrial Projects for Components.

AFI KLM E&M has a network of repair workshops located in Europe (Amsterdam and Paris), Asia (Shanghai, Singapore and Mumbai) and America (Miami, Atlanta, Phoenix..). Boina: "Firstly, this positioning helps us to serve our customers as closely as possible and to understand the needs of each of them by adapting to them. Then, we have a technical coordination between our workshops which helps us to offer all our customers the same repair standard of quality."



Component repair by Barfield. Photo: Patrick Delapierre

All repairs performed by AJW Technique fully meet all regulatory requirements and follow a strict quality assurance programme, assures Rustom. "We deploy a rigorous methodisation process where all core capabilities are 'methodised' to ensure bill of material for parts, task-listing and standard work are fully documented and implemented. This enables consistent, high quality delivery that is tracked for efficiency, reliability and cost control."

Rustom says detailed, measured work-scopes have been developed by an experienced technical team in collaboration with shop-floor engineering and procurement teams. "Each repair is assessed in the context of the customer's operating environment, history, along with our own fleet history and market data to ensure the most optimised solution in line with cost and reliability protocols. We work in concert with our customers to develop optimal solutions based on our extensive repair and overhaul knowledge, coupled with their in-service experience."

Mr Ward from Vallair stresses that quality needs to be the mission statement of any repair shop – "consistent quality each time every time, should be fundamental."

Regarding Vallair's approved aerostructures repair facility in Chateauroux (France), consistency is one of many ideologies ingrained into the team. Ward says for a finished released component: detail, accuracy, care, quality, focus, job satisfaction and the mantra that perfection is not the target, perfection is the standard, marks out Vallair as the 'go-to' repair shop.

APOC Aviation say they make use of the best MROs in the world, according to Robert Ymker, Sales and Repair Manager – "Sometimes, there is a higher price involved. But the quality of the repairs are high and the warranty claims on units are almost zero."

Mr Ymker explains that when APOC Aviation receives multiple units of the same part number from a teardown project they limit the repairs to 1-2 units at a time. "When the first SV unit is sold, we send out the next unit to the shop. This way we have a shorter shelf life for units and the tag (warranty) does not expire unnecessarily."

Bii aero are also keen on working with reputable MROs who obviously have the required reg-



Robert Ymker, Sales and Repair Manager – APOC Aviation



There is increased demand to support cargo operators.
Photo: Messe München

ulatory requirements but also take issues seriously when they occur, e.g. fail on fit or premature failures. Repeat quality is the key. Blockley says organisations operating 5S, or other lean initiatives, are built around such principles so have a natural advantage.

At Spairliners, they bring together repair services, supply chain man-

agement and smart inventory management to ensure that everything is provided by a single source that can control and steer all processes.

“During such a crisis, we focus on our fundamental values even more,” de Larambergue comments. He says since Spairliners was founded by two airline MROs, the fundamental values of any airline - safety and quality - are part of the company’s DNA. “Our shareholders, Air France KLM Engineering & Maintenance and Lufthansa Technik, are especially renowned for their high quality and safety standards. Therefore, having access to their state-of-the-art facilities that offer a wide range of in-house repair capabilities and employ highly experienced mechanics and engineering experts, automatically ensures consistency in terms of quality. Further, we are taking the current opportunity of reduced customer requests to train our staff to ensure that our operational teams are equipped to provide the highest level of support and care for our customers at all times, irrespective whether fleets are grounded or not.”

Clearly, the current Corona crisis is having a tremendous impact on the entire aviation industry and will influence all activities within the sector. Aircraft operators, MROs, parts supplier, and repair facilities are having to rethink strategies to ensure parts are where they should be when needed.

Talking Point: Components

President and Co-Founder at Setna iO, **David Chaimovitz** talks about components and the key issues facing the current market.

The Covid-19 crisis has hit all of us incredibly hard. Fortunately, we have always maintained diversity in both the components we stock, as well as in the customers we support. We have over 4,000 different airworthy line items that are ready for immediate AOG shipments. Aside from galley equipment, most items are applicable to both freighter and passenger airframes. Although we have seen a huge downturn in demand, we are still seeing dozens of orders a week. Over the past 45 days, we have seen revenues triple on a per capita basis to cargo operators. This is due to a slight increase in orders from cargo operators, combined with much lower sales overall.

Forecasting future demand is quite the interesting mental puzzle for all business decision makers. We can assume global maintenance requirements due to component failures and life limits will remain consistent to pre-Covid-19 demand once aircraft inevitably return to the skies. The two real questions here are which fleets are airlines going to prefer going forward, and what will market pricing look like with regards to parts?

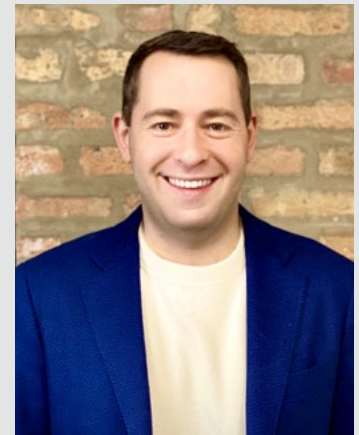
On one hand, operators like American Airlines are scheduling early retirements for over 100 airframes including 34x B767/757, 76x older 737NG manufactured between 1999-2001, 9x A330-300, and 20x E190. However, the extremely low prices of oil could potentially make purchasing or leasing a new airframe much less attractive. How will airlines react? Will they utilise older aircraft for longer? Or will they invest in the much more expensive new technology?

In terms of component prices, we know there will be additional supply of material hitting the market. The question is how much,

and what does that do to market pricing? Our best guess is that the most at-risk components are those where supply scarcity (and not repair cost) keeps the market inflated. A 737-800 IDG worth \$220,000 as of January 2020 that only costs \$50,000 to overhaul will likely collapse in price. However, a 737-300 valve that had a January 2020 market value of \$5,000 that costs \$3,500 to overhaul will likely lose much less value as a percentage of its total price. Given the huge degree of uncertainty in the market, there are potential supply chain disruptions once demand rebounds. No one really knows what to pay for a part out candidate right now. Companies are also going to be very hesitant to invest in repairs. Although this is a contrarian position, there could be some potential for supply chain shortages of in stock, ready to go components.

Right now, no one has any real answers. We all just have questions, and the number of variables seems to increase by the day.

Setna iO is a global component stockist based in Chicago and London.



David Chaimovitz, President, Setna iO