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“The entire world is facing shortage of parts and LRUs, the OEMs have not been capable of sustaining the rate of manufacture to match demand.”

Armando Filho, VALLAIR

Evolving landscape sparks changes to **inventory** management

There is huge appetite for components while facing significant changes in part services.

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With the backdrop of supply chain disruptions in the aftermarket, MROs and parts suppliers are having to rethink their strategies for managing surplus inventory.

By Keith Mwanalushi

The post-pandemic recovery is now in full swing and there is a huge appetite for aircraft parts, however, the industry is facing significant changes in part services. “The entire world is facing shortage of parts and line replaceable units [LRUs], the OEMs have not been capable of sustaining the rate of manufacture to match demand,” indicates Armando Filho, Director of Material Management at VALLAIR.

Filho reckons it will take a few years for this situation to recover and as a contingency plan, many operators and MROs are looking for used serviceable material (USM) and green time parts to replace critical LRUs until stock levels have recovered - “normally, major shortages are related to engine parts,



Armando Filho, Material Management Director at Vallair

and critical components like APUs, nacelles, landing gear, wheels and brakes and the like.”

VALLAIR has been working with consumables on consignment, however their recent aircraft teardowns have enabled the company to power-up on parts fast. “This is primarily due to efficient management of repairs and ensuring that exchange units are aligned with the historical consumption for each type of aircraft. However, this varies a great deal because each customer has been flying under different circumstances, so we need to be flexible and always search for alternative solutions as they are needed,” he tells.

VALLAIR is focused on acquiring aircraft for airframe teardown,



The industry is steering towards maintaining comprehensive stock levels.

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segregating all parts and identifying LRUs for which they have demand or historical usage and sales data as a guide. "Basically, we are generating surplus material from our own activities and external sales from any of our commercial aircraft teardowns," Filho states.

At Magellan Aviation Group, they see the landscape continuously evolving with distinct challenges and opportunities. "The significant workforce shortage in MRO facilities coupled with airlines' strategic decisions to cannibalise parts instead of incurring costs for replacements or repairs during the pandemic have given rise to complex supply chain challenges, primarily a bottleneck in parts services from repair vendors," says Richard O'Grady VP, Trading and Asset Management.

With air travel resuming and airlines swiftly reestablishing their schedules, Magellan have noticed a robust appetite for single-aisle narrowbody aircraft parts and their respective engines (-5B, -7B,

and V2500). Most notably, the demand for B737NG material is at an all-time high.

O'Grady observes that one of the more notable shifts caused by the pandemic has been the turnaround in

favourability of certain freighter aircraft and their engines. As such, when demand for airfreight surged, the B777F emerged as a reliable option powered by the GE90. "This shift in the market caught the attention of Magellan early on, fuelling our interest and recent acquisitions of two GE90-115B engines."

Magellan's move into the GE90 market will explore opportunities brought about by changing circumstances. "It serves as a reminder that having an agile inventory management plan allows for unexpected changes to drive growth in surprising directions," O'Grady adds.

During the recovery phase, airlines have been intensifying their efforts towards aircraft maintenance and upgrades, says Aaron Shellie, Vice President Sales at Setna UK. "These efforts are aimed at swiftly reintegrating their fleet into service while amplifying overall capabilities." However, Shellie feels persistent delays continue to plague the supply chain, primarily attributed to extended lead times from OEMs for spare



Aaron Shellie, Vice President of Sales Setna UK



Mark Elliot, Director of Inventory Strategy at AJW Group

parts required for repairs. "This dynamic has resulted in a remarkable trend; we see that certain newly stocked materials are rapidly depleted within a span of seven to 14 days."

In addition to managing routine operations, Shellie sees a noticeable surge in demand for essential components pertaining to avionics, engines, and landing gears emerging. He says this underscores the aviation industry's heightened reliance on these critical elements.

Over the past two years, Setna iO have strategically acquired more than 40 commercial aircraft for teardown but despite these efforts, specific part scarcities persist, prompting their global sales team to diligently manage stock levels through collaborative market engagement.

The approach at Setna involves orchestrating seamless cooperation with vendors, necessitating vigilant oversight of Airworthiness Directives (ADs) and Service Bulletins (SBs). "Agility is the watchword, as vendors must promptly secure material for shelving post-SB issuance or rapidly engage with MROs to enhance material suitability. Our operational tempo is characterised

by same-day decision-making, a keen pace, and resolute efforts to sustain comprehensive inventory coverage," says Shellie.

As we steer towards the goal of maintaining comprehensive stock levels, the interplay between supply and demand occasionally results in gaps. "However, our commitment to nimble thinking and rapid decision-making remains unwavering. In this realm, the ability to swiftly analyse situations and arrive at informed judgments is the cornerstone of our operational efficacy," Shellie continues.

According to Mark Elliot, Director of Inventory Strategy at AJW Group, the current market circumstances are adding a slightly different aspect to the issue of changes in parts services. "There are the normal high removal parts that we see flying off the shelves in the summer season when flight hours are high. However, there are also components where demand clearly exceeds supply due to ongoing supply chain challenges, such as vacuum generators, landing lights, and engine control units."

Where this is the case, Elliot says there can be a tendency to protect stock holdings, so organisations will be willing to loan or exchange components, but less willing to sell them. "This trading balance is something AJW must consider to ensure we hold stock for our contracted customers. However, we try to predict these situations and maintain appropriate stock levels, to not constrain our trading activity, and ensure that we still have items available to sell as well as exchange or loan."

Elliot compares the current aviation market to the state of the UK economy where demand remains high, despite the cost-of-living crisis, but supply chain challenges are driving inflation in market prices for the most severely affected components. He adds: "As these challenges unwind, the market prices should return to a more normal equilibrium level with lower volatility. This will facilitate a smoother path for airlines and other aviation industry organisations to meet customer demands as the recovery continues."

AJW uses sophisticated statistical and



Demand exceeds supply on some components due to ongoing supply chain challenges.

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probability-driven internal inventory optimisation tools to manage its inventory. “We take a forward-looking, proactive strategic approach to ensure we invest in the right areas to support our forecast business growth. This forward focus minimises the need to react to changes in demand or supply. If there are market movements in these areas that require amendments to the variables in our tools, these can be adjusted quickly, and our agility allows us to action the revised modelling results rapidly,” Elliot explains.

Elliot advises to manage the shop servicing times rather than investing in additional stock. “You find the balance between where you’re willing and not willing to invest in stock and where you want to focus on the vendor relationship to get issues resolved.” Due to AJWs global stock availability, the company often holds units that can be harvested for piece parts to alleviate issues with vendor supply chains and allow repairs to proceed.

Additionally, Elliot feels the key element of inventory planning is to

predict a change in demand rather than having to react to it. “We have variables within our internal models that allow us to select categories where we would like to increase our stock holding. This helps facilitate business growth in those areas and to meet predicted and expected future increases in demand.”

Over the last three years, Jason Reed - President of Flight Solutions Group – a GA Telesis company- has observed some key trends – one of the key areas in parts services is the move away from flight hour service agreements and a move more towards long-term lease, exchange, and purchase. “Many operators realised that during a downturn, they would continually face minimums in their service agreements proving to be costly at the absolute wrong moment in time. Couple that scenario with a high interest rate environment as well as a delay in OEM parts deliveries, and you get a heavy shift upwards in airframe USM parts buying and exchanges.”

Due to this perfect storm, Reed reports that Flight Solutions Group are currently recognising the highest



Jason Reed, President, Flight Solutions Group

airframe sales to date. He says single aisle APU sales and leases are the highest that can be recalled also due to the enormous lift requirements being demanded within the industry. “Engine product sales are still on the upswing, but teardown management in those areas is supporting operators’ in-house utilisation of LLPs before going to the market. We anticipate that trend to end by next year when in-house teardowns slow heavily, assets hit the market again via teardowns, and MRO shops begin to have even fuller engine shop visits,” he anticipates.

At GA Telesis, they are utilising an ingenious digital process that tells them in real time what products are needed and when. Reed says by using their own algorithms, they can identify daily supply, demand shifts, and react quickly with the procurement and repair teams to ensure they have the right product at the right time and place. “Not to mention, because the industry faces a hurdle in operations, the open order book and age of aircraft create a simple formula for success in managing your procurement cycle. The cycle is quite repetitive in nature and easily forecastable,” Reed states.

Single-aisle demands have always



Predicting stock levels ensure that items are available.

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been the more significant requirement, as Reed observes but now, looking toward the future, he feels that demand is increasing even more. "It's a law of predictability and overall odds when looking at your airframe procurement, and single aisle has an overall greater chance of success."

On the engine side, the situation is even more straightforward, according to Reed, with hours and cycles being the key driver in the life of an engine. "The only change we have seen on that side is the longer life utilisation and rebuild process being much greater than initially predicted ten years ago. The growth of the e-commerce market has driven the cargo market and belly space utilisation to new heights, thus the need for more maintenance events per engine serial number."

At Horix Aerospace in Switzerland, they are currently doing good numbers on rotables, avionics, and turbine engine parts, as well as hard to find and obsolete components; that said, being a small player in the market, these relatively small numbers gives the company a clear indication that their acquisition strategy works fine for both crisis and recovery phases.

"We simply do not relax on good results," says Simone Intini, Components Trading Manager at Horix Aerospace. "Our dismantling programme demonstrated to be a winning solution for owners and operators in search of an economic opportunity to get more value from older platforms."

Under its Trust Consignment Programme, MROs and operators can let Horix manage their surplus stock. "Markets are continuously moving and so are we, searching or proposing dismantling or consignment opportunities. It is a sort of plan as you



Simone Intini, Components Trading Manager at Horix Aerospace

work approach, where our supply adapts to demand, seamlessly," says Intini.

Marco Taufer, Chief Commercial Officer at Horix Aerospace says the strategy is to think and act exactly in the opposite way to the just-in-time principle. "We try to fill our warehouses with as much material as possible. While selling materials is a fully automated process managed by our company operating system, buying or collecting materials under consignment is a process that involves effective marketing strategies and human interactions. The basic principle is that the more material we stock, the more linear the supply chain becomes," he explains.

Taufer gives a few reasons why consignment is having so much success

including the economical returns – "the large MROs serving airlines have finally realised that selling surplus material under a consignment makes about six times more money than selling their material in bulk through an auction.

"If a customer calls an MRO or an operator to ask for a spare parts quote, this is a task that takes a back seat to the main activity because the team has higher priorities. For a company that manages spare parts instead, then the priorities change, and an RFQ becomes the number one priority to be processed," Taufer adds.

Filho from VALLAIR stresses that companies with enough space and workforce to manage consignments alongside their day-to-day activities have minimal stocking costs. "For the consignee it could be helpful in the first instance in terms of cash flow because you just pay the consignor when the part is used or sold, however, unless the consumption of parts is high for the consignee it could end up being more costly than beneficial."

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Marco Taufer, Horix Aerospace