

FREIGHTER TRENDS

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AN UPDATED TRENDS IN THE FREIGHTER INDUSTRY, P2F CONVERSION, MRO & AEROSPACE

GLOBAL E-COMMERCE IS SET TO GROW 38% OVER NEXT 5 YEARS THIS RISE IN CARGO DEMAND WILL REQUIRE FREIGHTER AIRCRAFT, INCLUDING NARROWBODIES AND WIDEBODIES, TO ACCOMMODATE

The converted freighter (P2F) market has shown resilience and growth in the current year despite challenges posed by the global pandemic. The demand for air cargo transportation has been on the rise due to various factors such as e-commerce expansion, medical supplies distribution, and overall recovery of global trade. Freighter Trends learnt that the market outlook for converted freighters (P2F) by year end appears promising based on current trends and projections. Companies are increasingly focusing on building resilient supply chains that can adapt to disruptions. The sustained growth of e-commerce is expected to fuel ongoing demand for air cargo services, thereby supporting the need for additional freighter aircraft conversions. Here are the details

How has the freighter market done so far in the current year? Is the market looking promising by the year end?
Brian McCarthy - Vice President Marketing & Sales, Mammoth Freighters
: After attending various conferences and trade events I must have heard the words

"consume" and "digest" and "indigestion" a half dozen times in relation to the over build of the narrow body aircraft market. We continue to hear too much money and too much. Private equity found its way into the conversion business, and the result is that there were far too many aircraft

converted.

There is a growing interest in the 777 because it is poised to replace 747's in the next decade. Just about all of the players that were willing to take on a Degree of risk and play with both IAI and Mammoth have done so. Numerous other operators are carefully



EFFECTIVE ASSET MANAGEMENT IN MRO ENHANCES PERFORMANCE, REDUCES DOWNTIME, AND BOOSTS PRODUCTIVITY

Effective asset management is crucial in the Maintenance, Repair, and Operations (MRO) industry, as it enables organizations to optimize their assets' performance, reduce downtime, and improve overall productivity. In an exclusive to Freighter Trends, the industry professionals shared that Proactive maintenance is critical in preventing costly breakdowns and prolonging asset lifespan. Asset management systems enable organizations to develop comprehensive maintenance plans based on factors like usage patterns, historical data, and manufacturer recommendations. They are of the opinion that by optimizing asset utilization and minimizing downtime, effective asset management enhances overall productivity and operational efficiency. Here are the details

1. Can you explain the importance of effective asset management in the MRO industry?

Licinio "Li" Garcia, Director of Materials – LEAP Program, StandardAero, at San Antonio, TX facility - Effective asset management is important in order to deliver bespoke customer solutions which maximize the value of an engine (or other asset) over its life cycle. As such, the approach taken to sustain an asset will vary over the course of its life, and will depend on the requirements and preferences of individual customers and operators.

Lindsay Cooper, Head of Asset Management, AJW Group - Effectively managing inventory is vital for MRO stakeholders to maintain minimal equipment levels and for optimal customer service delivery. It requires forward planning and a strong business strategy; and businesses that have made substantial investments in stock are better equipped to mitigate supply chain disruptions, meet their economic targets, and achieve business success.

AJW has invested heavily in its inventory and holds 450,000 line items valued at over US\$500m. It is our highest priority to efficiently manage this stock to

best serve our global customer base. This is testament to our success as an independent player and why we are the partner of choice across the industry.

Raphael Mertens, Head of Strategy and Business Development in Lufthansa Technik's Aircraft Component Services (ACS) business segment - Effective asset management is a key aspect for MROs, not only since today's tense supply chain situation. Since decades, tailoring and effectively managing the constant supply with aircraft components has been a major pain point for airlines around the world, especially in the case of unscheduled maintenance events, i.e. AOGs (aircraft on ground), where every minute of downtime can aggregate huge costs. With our Total Component Support (or TCS for short), we relieve airlines from the complex and costly burden of having broad ranges of parts ready in their own stocks at all times. TCS instead works in an open-loop principle, in which contracted airlines are guaranteed to immediately receive a serviceable component from Lufthansa Technik whenever needed, and wherever needed.

The unserviceable component is repaired, either in one of our in-house repair facilities or subcontracted within our company's extensive global network, and



Lindsay Cooper

afterwards used to replenish the parts stock, where it will wait for its next installation to a customer aircraft.

2. How does StandardAero approach inventory management and optimization?

Licinio "Li" Garcia - As a leading independent MRO provider with revenues approaching \$5 billion, StandardAero handles a tremendous volume of inventory, across over 50 facilities worldwide. Our procurement activities are supported by a dedicated corporate supply chain team, which enables us to employ best practices across the company while maximizing our buying power. Our computerized inventory management systems enable us to optimize our workflows and procurement activities, with barcodes and RFID tagging used to simplify inventory tracking.

Lindsay Cooper - AJW uses advanced statistical and probability-driven inventory optimisation tools to manage its inventory. We take a proactive approach by maintaining a robust inventory, ensuring a resilient buffer against uncertainties in the supply chain. A key aspect of our strategy involves a continuous influx of aircraft for



disassembly, allowing us to meet the dynamic requirements of our global customer base. This approach not only bolsters our stock levels but also provides a steady supply of serviceable material, reinforcing our commitment to customer satisfaction.

Our in-house inventory management tools allow for the introduction of demand pictures for new contracts to ensure we best service our global customers by procuring the stock in advance of the contract commencement. Adopting this forward-focused attitude minimises the need to have a knee jerk reaction to changes in demand or supply. If there are market movements in these areas that require amendments to the variables in our predictive tools, these can be adjusted quickly, and we can action the revised modelling results rapidly.

The Group operates a sophisticated pooling strategy by strategically positioning our inventory across the world, which enables easy access and distribution to our regional customers and our meticulously designed inventory management and logistics solutions are tailored to meet the operational demands of our customers.

Agility is at the core of AJW Group's MRO and business operations. We embrace it in our approach to inventory management and across our organisation.

Raphael Mertens - With meanwhile more than 500 airlines from all over the world in our customer base and aircraft components currently worth around 2.2 billion USD in worldwide stocks, TCS is one of the leading global provisioning programs for almost every component that can be removed from a commercial aircraft type. Over the decades-long history of the program, we have continuously improved and extended it, so that nowadays it not only encompasses access to the world's largest aircraft components pool but also ranges from integrated real-time logistics services to comprehensive material management support. TCS customers mainly benefit from our enormous in-house components MRO expertise and our highly skilled workforce, our deep understanding of aircraft technologies, the customer proximity stemming from our global set-up and finally our unmatched relationship with major aircraft and component OEMs.

In my point of view, digitalization and automation are the most important drivers in this ongoing development of our TCS offering. Not too long ago, we have, for example, introduced artificial intelligence (AI) and machine learning (ML) algorithms to the global management of our spare parts pools. Based on our state-of-the-art digital parts record keeping, they now live



Raphael Mertens

up to their full potential in helping us to perform our pool management in real-time. AI- and ML-driven management algorithms can also identify trends in customer behavior and, on this basis, make recommendations to improve/refine the parts portfolio in each of our global pools. Hence, the automatism can always provision the right materials and parts at the right time for customer demand to increase. I see this close integration of customer interaction as a big step forward for our TCS offering.

3. How does StandardAero ensure the effective tracking and maintenance of assets throughout their lifecycle?

Licínio "Li" Garcia - Our computerized inventory management systems enable us to optimize our workflows and procurement activities, with barcodes and RFID tagging used to simplify inventory tracking.

Lindsay Cooper - Aviation MRO is undergoing a revolution thanks to technological advancements, particularly

the rise of AI, AR, and predictive maintenance. The industry is witnessing a surge in digital solutions, driven by their potential to boost operator availability and reduce airline operational expenses.

AJW is embarking on a digital transformation journey, spanning from customer-facing sales platforms to intricate back-end ERPs and operational tools. From pioneering automated fulfilment solutions to venturing into robotics for our MRO, AJW Technique, we are committed to providing unparalleled customer experiences across all areas of our operations.

AJW uses advanced analysis tools to identify demand trends and turnaround times to effectively manage stock levels and to guarantee we have the right parts and components in the right place at the right time.

We're embracing a "stage gate" approach to monitor the lifecycle of component parts throughout the MRO process, facilitating better planning and certainty in managing inventory availability. For the physical logistics of components in transit, we're delving into IoT (Internet of Things) tracking. This includes smart alerts for deviations from planned routes and real-time monitoring of light, shock, and pressure levels, especially crucial for time-sensitive or high-value shipments.

Raphael Mertens - Tracking of our worldwide parts movements is ensured by employing state of the art software systems, and especially through the seamless cooperation with our large in-house logistics provider Lufthansa Technik Logistik Services (LTLS) with more than 1,400 employees taking care of global parts and production logistics.

Regarding maintenance, our in-



Licinio "Li" Garcia

house MRO abilities for aircraft components are traditionally very broad. Over the decades, our experts have developed countless certified repair solutions for all kinds of aircraft components. This even goes so far that in various cases we can offer our customers a certified repair solution where normally the part would go for scrap. This expertise, with which we can often spare our customers from procuring expensive new parts, gives us a strong position in the market. However, for the effective maintenance of aircraft components assets we do not exclusively rely on the broad spectrum of services our own global network of repair shops has to offer, but also on close collaborations

4. How does StandardAero collaborate with OEMs and other partners to ensure the availability of spare parts and components for asset maintenance?

Licinio "Li" Garcia - StandardAero does business exclusively as an OEM-authorized service provider, meaning that we enjoy close relationships with all of our engine

OEM partners. This enables us to get good visibility of the OEMs' material supply forecasts, while in turn allowing us to provide feedback to the OEMs in terms of those demand signals which we are seeing in the marketplace. We also have a number of dedicated asset management teams, including our internal Engine Trading team and our PTS Aviation subsidiary, which enable us to provide customers with a comprehensive suite of material options, including used serviceable material (USM), modules and green time engines.

Lindsay Cooper - AJW has been operating for over 90 years and supports over 1000 airlines across 100 countries. We have spent the past nine decades building relationships and collaborating with industry partners. Our well-established relationships with OEMs and MROs, including our state of the art MRO facility in Montreal, AJW Technique, play a pivotal role in our success, and are what allows us to procure and supply components and parts delivering the service excellence for which we are known.

Raphael Mertens - I think one major advantage of TCS is our network's enormous flexibility sustained through a mix of in-house repair locations, third-



party subcontractors, and close ties to the component OEMs, with which we traditionally have a strong relationship. The latter aspect lets our customers benefit from several additional advantages, such as quick access to intellectual property, repair material, line replaceable units (LRUs), alternate parts, or used serviceable material (USM), to name just a few. Despite our extensive inhouse parts MRO capabilities, we can also subcontract certain work packages within the TCS fulfilment process to selected third parties and/or the OEMs. Our goal is to always find the best possible solution for the customer's, often short-notice, part demands, even if these goals cannot always be met with our own capacity.

5. How does StandardAero ensure compliance with regulatory requirements in asset management?

Licinio "Li" Garcia - StandardAero works closely with regulatory agencies across the globe to ensure that we remain in compliance with national and international regulatory requirements. In February of this year we were proud to be a founding member of the Aviation Supply Chain Integrity Coalition, whose members include senior representatives from Airbus, American Airlines, Boeing, Delta Air Lines, GE Aerospace, Safran





On the other end, our management team strives to make compliance and quality initiatives transparent and available to everyone, internally and externally to engage them in continuous improvement. Our processes are systematically and rigorously reviewed both internally and by external stakeholders to ensure we lead the way in efficiency, effectiveness, and innovation.

Maintaining our quality and compliance certifications worldwide is critical to the on-going success of the business due to the heavily regulated and competitive nature of the aviation industry, and the high expectations of our customers. AJW group is committed to upholding its compliance and regulatory standards by operating according to best business and operational practices.

and United Airlines. This Coalition is intended to help prevent unauthorized parts from entering the aviation supply chain and to strengthen the supply chain's overall integrity.

Lindsay Cooper - AJW has a business culture that focuses on compliance and quality performance. This enables the organisation to achieve exemplary customer satisfaction by conforming to

customer and regulatory requirements. The Group works with various, carefully selected, OEM partners to provide streamlined repair management and have agreements with these OEMs that enable us to provide the highest quality repairs and ensure continuity for upgraded equipment and new fleets. Our quality code engineers remove unsafe acts or conditions and foster air safety within the supply chain.

Raphael Mertens - It goes without saying that we only subcontract work to proven suppliers and partners that meet our own high standards regarding quality and turnaround times. Through our Operational Excellence program, we have established efficient steering processes for all our subcontracted work, ensuring the same high standards throughout our network.

AERFIN EXPANDS GLOBALLY WITH NEW HQ AT ST. MODWEN PARK, NEWPORT

AerFin has announced that it has signed a 10-year lease agreement with St. Modwen Logistics, one of the UK's leading logistics developers and managers, for a new 115,000 sq ft facility at St. Modwen Park, Newport, which will act as the company's global headquarters from the end of 2024.

The facility offers custom-built space for enhanced aviation aftermarket services activities, including engine disassembly and maintenance, repair and overhaul operations, as well as traditional warehousing and logistics. The agreement doubles AerFin's engine MRO capacity to around 200 quick-turn shop visits per year and expands its UK storage capacity by a third.

Additionally, the c.5,600 sq ft of high-specification office space offers a modern, comfortable environment in which to drive the continued growth of AerFin's global commercial operations with a



superior employee experience that also delivers net zero carbon operations via reduced energy usage.

Earlier this year, Blackstone announced that from July 2024, St. Modwen Logistics' portfolio of assets will become part of Indurent, a new pure play UK logistics champion. The business will have more than 200 assets totaling 26

million sq ft of logistics space.

Simon Goodson, Chief Executive Officer at AerFin, commented: "We are pleased to commit to our new, global headquarters, marking a significant

milestone in AerFin's growth story. This move will significantly enhance our operational capacity and position us well for continued expansion. We are collaborating with our selected contractors to ensure the space is fully functional by year-end to allow us to take advantage of the new facility's unparalleled, advanced features".

Peter Davies, Senior Development Director at St Modwen Logistics, added: "The growth story of AerFin from local consultancy to global player in the aviation world is impressive, and we are proud they have chosen

St. Modwen Park Newport to base their new global headquarters. AerFin's arrival is yet another feather in the cap for the park and its growing reputation as an attractive home for big business, with Grade A office space as standard, plus space for both production and distribution operations under one roof."