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MRO

Management



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2022

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PERFECTING PARTS INVENTORY PRACTICE

How can airlines ensure that their spares inventory is not costing them too much, either by not having too much sitting on the shelf or by not being short when a problem arises?

Bernie Baldwin listens to some expert advice

Within the general grouping of aircraft spare parts, there are those which the regulations say are 'mission critical', and those that are not. If something happens to one of the latter, a flight can still go ahead and a fix can be implemented later. If one of the former fails though, then the airline is left with an AOG (aircraft on ground) situation and the costs can immediately begin to stack up.

Obviously if an aircraft is at its home base or at an outstation where there is a store of spare parts, those AOG costs can be minimised – as long as the necessary replacement part is in stock. Otherwise, an aircraft not earning revenue, plus the added expense of locating a replacement, having it transported and the paying for additional repair work can take considerable sums of money. Should it happen a few times, there may well be some serious pressure on the balance sheet. Thus smart management of the spare parts inventory is a vital and valuable discipline.

There are many elements to managing the parts inventory. Benjamin Moreau, VP sales key accounts for Air France Industries KLM Engineering & Maintenance (AFI KLM E&M) offers his company's thoughts on what these elements are, beginning with



parent airlines' need for predictive maintenance too. "Prognos allows Air France, KLM and our other customers to anticipate unscheduled maintenance items and to minimise [the amount of] inventory without affecting dispatch performance," Moreau states.

APOC Aviation says its mission is "to keep aircraft fully operational by sourcing and delivering

used aviation products of only the highest quality". Such a service allows operators to successfully manage their parts inventory, without having to pay for new replacement parts.

Assessing the key components of successful parts inventory management, APOC's sales manager-components, Florent Michel, believes that "a robust IT program that works for the user" is vital, pushing information to the user when to replenish stock, and detailing which parts are in demand in the market.

According to Michel, the program needs to enable the user to access crucial

data quickly (through reporting) and extract it from the system. "Data is key - whether past transaction data, market demand or technical data relating to the unit," he declares. "The more data you have, the easier it is to extract value from your inventory. If you do not know what you have on the shelf in terms

of value and where the demand is, you will not be able to sell effectively."

Meanwhile APOC's inventory management programme today is specifically tailored to parts trading. "In the medium to longer term, we plan to evolve the

the relationships with each customer. "Over time, we have built longstanding partnerships with our customers based on reliability, innovation and transparency, the quality of our maintenance work, and our proven availability concepts," he says.

"The key element then for managing parts inventory is to have reliable predictions of demand," Moreau continues, pointing out that IT has a role, but that it is not the only solution. "A maintenance software program can only predict parts needed for planned tasks. The operator's experience is key to build reliable predictions on most critical inventory needs that are not related to planned maintenance. Such experience has been capitalised on in our predictive maintenance tool, 'Prognos'."

Although it has third-party customers, AFI KLM E&M and its subsidiaries do of course serve their



1. The smart management of spare parts inventory is a vital and valuable discipline
2. Costs associated with an AOG situation will go down the quicker a spare part can be made available
3. APOC's sales manager-components Florent Michel advocates for a robust IT program



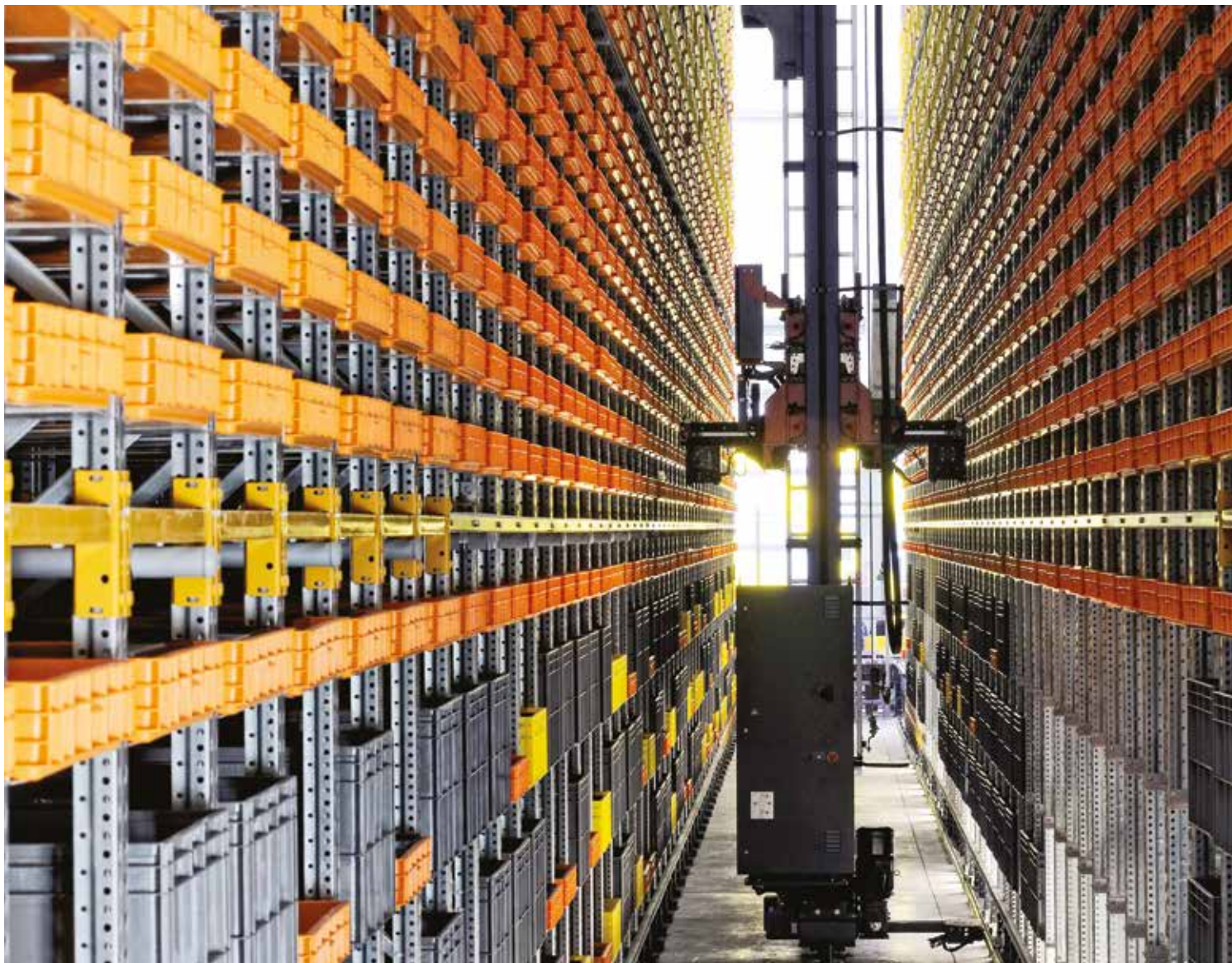
scope of our programme to encompass maintenance," Michel says.

This is recognition that there can be a variety of ways in which third-party components providers can assist airlines with their parts management strategy. Examples include the pros and cons of carriers keeping and managing their in-house stock completely and also how inventory levels need to vary across rotables and consumables.

"In some cases, airlines do not have the time or the resources to truly focus on sourcing so they rely on third-party component providers like APOC," Michel observes. "The goal of the airline is to guarantee that their aircraft are flying; they do not want to worry about always having the desired unit on the shelf. They pass on that burden/risk to the third-party component provider whose role is always to make sure that there is - at any given time - a unit on the shelf to support the airline."

There are pros for keeping inventory management completely in-house. "With in-house stock, airlines have better access to the unit and can meet their requirements more quickly/easily," Michel remarks, before noting the cons. "It takes

“DATA IS KEY - THE MORE DATA YOU HAVE, THE EASIER IT IS TO EXTRACT VALUE FROM YOUR INVENTORY”



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significant investment and experienced resources to manage in-house stock.

“Many airlines want to pass those costs to specialist component suppliers. They would rather pay a bit extra in terms of securing a third-party service rather than having to deal with the stock themselves. Of course it depends on the strategy of the airline and the cash flow they have. This is particularly applicable to rotables.”

AFI KLM E&M’s Moreau suggests that when assessing the amount of stock to keep, it helps to have a lengthy background in the field. “This is a process based on experience, starting years ahead of the entry into service of a new fleet. Having an operator’s

expertise here is also key to making the appropriate assessments for the benefit of Air France and KLM passengers and MRO customers,” he comments.

“Airframers and engine manufacturers’ recommendations are challenged via a detailed review of all maintenance tasks. The minimum necessary stock to achieve a certain performance in terms of dispatch reliability is the result of an analysis optimising the combination of part reliability, supply chain performance, dispatch tolerances and cost. The nature of the part – rotables or expendable – affects the supply chain more than the quantity of stock needed.”

DBK Aero is a new company set up to trade aircraft spare parts and aims to thrive “on consignments helping others make profit on their stock”. According to its CEO Delphine Kennedy, this is to be done “with a conscious mind that

“IT STARTS WITH AIRCRAFT FLEETS, TREND ANALYSIS, AIRCRAFT LIFECYCLE AND GENERAL MARKET DYNAMICS”



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- 1. AFI KLM E&M believes that operational knowledge is essential to optimise inventory
- 2. APOC's inventory management programme today is specifically tailored to parts trading
- 3. A third-party component provider should take on the burden of having units on the shelf

“Everything starts with aircraft fleets, trend analysis, aircraft lifecycle and the general market dynamics, such as behavioural passenger and fleet forecasting,” adds Kennedy.

For spares sourcing, airlines and their MRO departments (whether in-house or outsourced) also have available to them the comprehensive support packages increasingly offered by airframers and engine manufacturers. So how much do

they benefit the task of inventory control?

“More than benefitting the control of inventory, they actually give a clearer picture for the airline’s finances and forecasting. This is key on a long-term basis. It offers peace of mind and specific outgoings,” Kennedy says, although she adds a caveat. “These

support packages often have loopholes and do not necessarily cover 100 per cent of the airframes and engines. This is where smaller spare parts providers, such as DBK Aero, can offer better flexibility, offering a wide range of spares with no limitations and real on-time delivery.”

Loopholes or not, these support packages have been garnering a significant number of contracts from airlines. APOC’s Michel offers an explanation for their popularity. “They have shifted the ‘stress’ behind inventory management away from the airline,” he declares. “Additionally, they have made the stock more lean as the stock is

calculated strictly based on flight hours/usage. No excess stock is needed if you customise your inventory to your usage.”

Michel notes another reason why the OEMs’ packages are well-liked. “They ensure that your inventory is rotating a lot and hence renewing itself in terms of repair tags,” he explains.

While he acknowledges the OEMs’ presence in the aftermarket, AFI KLM E&M’s Moreau advocates a different approach. “Of course, aircraft and engine manufacturers are willing to offer comprehensive packages, but as an airline-MRO we strongly believe that



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operational knowledge is essential to optimise inventory. It is this experience which allows us to increase performance, adapt operator inventories and thus reduce operating costs,” he elaborates.

“We operate the same fleets as our customers, so we know how recommendations not based on this operational experience can easily result in unsustainable rates for an airline. Ensuring impartiality, our job as a maintenance operator is to optimise dispatch reliability, not to sell parts, so our recommendations are truly focused on the needs of the airlines.”

Each operator must make its own choice, of course, but the variety of options available when optimising inventory mean that a solution can be reached to fit almost any requirement. **M**



we need to evolve and try to be more sustainable”. The company has already received full ASA-100 accreditation from the Aviation Suppliers Association.

Taking an external view on how a supplier would go about assessing stock requirements, Kennedy begins with the reminder that operators need to understand and appreciate just how complex an industry aviation is, and that time taken to look at the market can be valuable. “There are now more and more tools which enable both the suppliers and the airlines to make decisions on stock inventory. Through advanced data analytics, we can now make the right decisions,” she comments. Certainly, software solutions to aid matters should be incorporated into the process.