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Turning Surplus Parts Into Cash

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Turning Surplus Parts Into Cash

Managing inventories effectively

By David Dundas

For many businesses, inventory management can be critical to overall success. However, unlike MROs, demand for products can usually be easily managed and future demand accurately forecasted. Beyond that, inventory levels are not usually based on 'worst-case scenarios' and it is not usually a financial catastrophe if a part or product has to be put on back order with delivery due somewhere between two days and a week. How many times have we been told that before we can get our car back from the garage or our washing machine working again, we have to wait for a part to be ordered? However, our car is different to a Boeing 737 MAX or Airbus A320 with upwards of 5,000 passengers in numerous destinations who are depending on us to be there for them over the next few days! Those MROs contracted to keep airplanes in the sky and not on the ground don't have the luxury of obtaining parts on an 'as and when needed' basis. If you are contracted to keep an aircraft fully operational, you need to hold sufficient inventory to cover pretty much every eventuality for the need to replace a worn-out or failing / failed part. And aircraft parts' inventory is frighteningly costly to maintain and ties up so much working capital. However, as we will discover, this is a very simplistic overview of the situation and there are many other factors which have to be taken into account when managing inventory, and especially surplus inventory. After all, how did that surplus occur in the first place – poor management or customers changing their requirements?


Lindsay Cooper, Head of Asset Management, AJW Group

So, what are the most common reasons for excess inventory in the first place?

The aviation industry is unpredictable, which is why having an effective inventory strategy is vital. Managing surplus inventory with precision is a balancing act that requires a careful evaluation of demand patterns, historical data, and lead times. MROs can overestimate demand and

> ***"As an MRO, AJW Group continuously develops its stock management and logistics solutions."***
>
> *Lindsay Cooper, Head of Asset Management, AJW Group*

experience unexpected supply chain issues or unscheduled disruptions all of which could lead to excess stock. Low inventory turnover or older aircraft being retired can leave an MRO with a stock of obsolete parts, which may lead to excess stock of certain lines. In other instances, a business may make the decision to bulk purchase inventory items either for financial reasons or to accumulate safety stockpiles at a time when the industry is thriving only to later experience a shift in the status of the industry leaving them with a surplus.

Some choose to invest in certain application types with long lifespans as their components are going to be trading for years to come and are likely to hold their value. Conversely, other application types hold more risk for investment, where retirements and teardowns are more frequent, and hence the market is likely to be flooded with an additional supply of components. Managing inventory requires careful forecasting so MROs must have a strong inventory strategy and thoroughly research their customers' needs to maintain healthy inventory levels, while avoiding a surplus. It is a balancing act.

Nigel Christie, Sr. Vice President and Managing Director, GA Telesis

Lindsay Cooper, Head of Asset Management, AJW Group explains further. "As an MRO, AJW Group continuously develops its stock management and logistics solutions. By utilising advanced data analytics, we can accurately forecast demand, monitor turnaround times, and adjust inventory levels, accordingly, ensuring that the right products are available when and where they are needed thereby avoiding a surplus, or shortage. Digital transformation has been the most significant development brought about by supply chain disruptions, as it has allowed us to streamline our procurement processes and operational efficiency."

"Surplus inventory for an airline is a common subject at board meetings. There are a number of good reasons for and airline to accumulate spares, to name a few we could say: stocking of critical spares to avoid AOG situations, redundancy due to obsolescence and the most common, over stocking due to over forecasting upon initial provisioning on a new aircraft type to the fleet. However, surplus can also result from aircraft fleet changes, example when an aircraft type is no longer operated by an airline," says Carlos Garofalo, Manager of Asset Life Cycle and Components at AMROS Global, feelings shared by Barry W Startz, Sr. Director TAT Trading and Leasing, TAT Piedmont Aviation Component Services. And still there are more reasons, as highlighted by Nigel Christie, Sr. Vice President and Managing Director, GA Telesis as he advises that: "when airlines acquire new-generation aircraft early in their life, there is no data available regarding previous reliability. Parts

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>
> *Nigel Christie, Sr. Vice President and Managing Director, GA Telesis*

Ray Kane, Head of General Aviation and Aftermarket, IBA

provisioning will be based on the OEM's MEL, and they will often overprovision. In addition, issues in the supply chain or a longer repair process may cause the operators to buy additional components to cover these delays, resulting in future excess."

Ray Kane, Head of General Aviation and Aftermarket at IBA is very much in agreement with much of what has been said above, but identifies a couple of other key points, questioning whether the MRO has a strategy to scrap, sell or repair parts, whether there is excessive storage space that has simply become "holding stations" or whether the inventory itself is / can be used as loan security to leverage financing for other assets? Once again, Sarah Klein Vice President, Operations at Setna iO and Armando Filho, Director of Trading and Material Management at Vallair are very much in agreement concerning a mismatch between forecasted and actual demand for parts as a source of excess inventory, thought ultimately, Klein identifies one main 'culprit', stating that "poor inventory management practices are often at the heart of the issue. This can occur when Airlines and MROs buy excess materials, misjudge market prices, or fail to accurately track inventory levels across multiple locations. This problem ultimately comes down to accurate and agile data management. Not only do systems need to be in place to reduce data silos, but extreme attention to detail is required to stay agile in an ever-changing market." Meanwhile, Filho warns: "Companies need to consider OEM/supplier lead time, transit time, customs and other factors. If they don't have the right tools to consolidate this information and control minimum/maximum stock and restocking levels, they are likely to experience shortages or excess inventory. While some deviations can be expected in any process these must be managed to minimise impact."

At ILS (Inventory Locator Service), Greg Creekmore Regional Sales Manager – Americas has neatly divided the problem with excess inventory as one faced by both airlines and also MROs. For airlines, he sees that the causes of excess inventory can be traced back to fleet adjustments, aircraft lease returns, sales of fleet types and overstocking for operational needs. From the MRO's perspective, he has identified the expiry of support contracts, the shifting to an alternative MRO, or hedging for spare parts also being to blame.

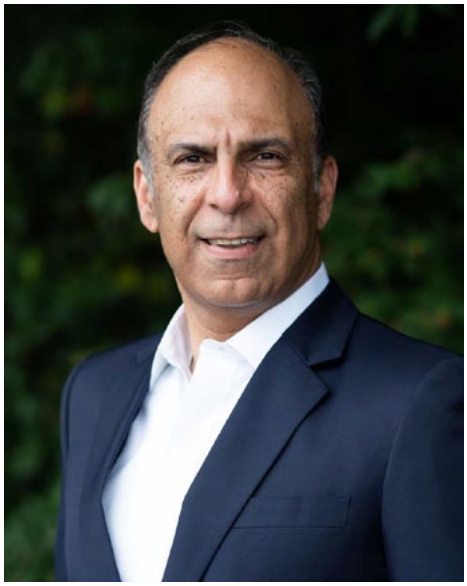
Randal Richey, the company VP Programs at VAS Aero Services, sees one of the problems as being 'caught between the Devil and the deep, blue sea' whereby it costs money to maintain a substantial inventory, yet there are financial penalties for failing to complete a maintenance event. "This need, coupled with complex fleets, high aircraft utilisation and supply challenges, make optimising inventory a constant challenge. Improved management systems, AI forecasting, on-time delivery and real-time visibility via RFID can help, there will always be surplus materials that need to be disposed of and monetised," he points out. While Mike Cazaz, CEO Werner Aero, LLC touches on most of the points highlighted above, he does highlight one other aspect that can create excess inventory, as in the case of bankruptcy, whether an MRO or carrier.

> ***"Poor inventory management practices are often at the heart of the issue."***
>
> *Sarah Klein, Vice President Operations, Setna iO*

Who is best placed to sell surplus inventory?

There are no legal restrictions regarding who is allowed to sell aircraft parts, whether new or used. Where the law and regulations come into force is with the authentication of such parts, and the qualifications required in order to fit those parts. However, selling aircraft parts requires knowledge, skills and an understanding of the market to a level that is unique to aircraft parts. As a result, unless you are a major carrier with your own in-house MRO set-up that is capable of successfully buying and selling inventory, it is generally accepted that even when fees or commissions are paid, experienced traders can still achieve far better prices for their clients than were the clients to sell inventory themselves. As Nigel Christie points out: "Airlines' core business is flying passengers; they do not have the resources

Sarah Klein, Vice President Operations, Setna iO



Mike Cazaz, CEO Werner Aero

> ***"There will always be surplus materials that need to be disposed of and monetised."***
>
> *Mike Cazaz, CEO Werner Aero*

of an aftermarket specialist like GA Telesis, with a global presence and hundreds of employees dedicated to USM sales. We also have uniquely developed data systems designed to optimize sales of this material."

When it comes to selling surplus inventory, Carlos Garofalo points out that it all depends on the quantity, quality, market value (as opposed to NBV) of the surplus inventory on hand, and most importantly, availability of in-house expertise to process and liquidate in a cost-effective fashion to result in a benefit. This is backed up by Armando Filho, who advises that: "airlines and MROs may not have an experienced team to manage such sales. If this is the case, it is better to have a consignment agreement with a specialist organisation like Vallair to manage such sales for you. This approach avoids diverting your team from their primary responsibilities for something that is already causing storage costs, instead of wasting time and money trying to manage the surplus inventory yourself. A specialist can manage the process on your behalf in a professional way."

When it comes to who is best to sell surplus inventory, it is difficult to avoid the obvious facts that we touched on earlier. USM (Used Serviceable Material) sellers have extensive knowledge and resources for selling and shipping aftermarket parts and established sellers already have a network of potential buyers, making the sales process quicker and more efficient. Consequently, companies can focus on their core operations while the USM seller manages the excess inventory. As ILS specialises in such a service, Greg Creekmore is well placed to come to the following conclusion: "While companies can sell their surplus inventory directly, it is often more effective and efficient to consign it to established USM sellers who have the expertise and resources to maximise returns." In addition, Sarah Klein makes a strong case for different reasons as to why selling surplus inventory in-house makes little sense. "Each company has a different level of market knowledge and varying capabilities for handling the entire sales process from procurement to warehouse management and quality control standards as well as repairs, shipping, and managing payments. Companies without these organisational pillars likely do not have the processes for effective individual sales."

While not in disagreement with the above, there are those companies who have the resources and scope to create in-house sales capabilities for surplus inventory. Barry W Startz comments that: "I have had great success selling surplus inventory with Piedmont and Turbine Aero. We developed our own Trading Department. I have also used other companies to help move the surplus inventory. Most of the time the offer is too low, and we have scrapped the surplus to get the tax credit. Consignment is also a good option." In turn, Ray Kane asks a very pertinent question. "End user relationships are key here - are there established sales channels?" He also points out that inventory sales is not part of a carrier's core business, whereas an MRO at least will be more focused with modification standards and maintenance orders, adding that there is greater crossover with an MRO to manage its inventory. While many companies attempt to enter the USM marketplace, their efforts are often short lived and underperforming. Simply owning the materials and having the desire to generate USM sales are poor reasons to adopt the "go it alone" approach. Those who do find sales are difficult, growth is slow and revenue production marginal, at best. Surplus and excess stock sales and marketing require expertise and resources that many operators and owners just do not have, such as accurate parts valuation and pricing, and a distribution network and customer base ready to accept the materials. Randal Richey makes a valid case for specialists. "While airlines and MROs are experienced consumers of product, there is a dramatic difference when it comes to selling USM. Smart airlines and MROs focus on their core business and leave the business of USM parts redistribution and aftermarket sales to trusted USM supply partners like VAS Aero Services." This is further backed up by Mike Cazaz who comments that: "Selling surplus inventory in large quantities does require an infrastructure to include salespeople,

Greg Creekmore, Regional Sales Manager – Americas, ILS

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> *Greg Creekmore, Regional Sales Manager – Americas, ILS*

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> ***"While airlines and MROs are experienced consumers of product, there is a dramatic difference when it comes to selling USM."***
>
> *Randal Richey, VP Programs, VAS Aero Services*

sophisticated software and technology, warehouse space and understanding of the market. Usually these are not the strong areas of airlines or MROs."

To close, Lindsay Cooper advises that "selling surplus inventory item by item can be time consuming, especially if the items are for near obsolete aircraft. It may not be worth the effort... Whether a company has the resources and knowledge to do this is entirely dependent on its internal capabilities, sales network, and established industry relationships." To further make her point, she tells us that: "AJW has been around for 92 years, building relationships and collaborating with key players across the industry."

So, what options are available to MROs and airlines to monetise surplus inventory?

Airlines and MROs have several effective options for monetising their surplus inventory. Aftermarket aircraft part suppliers offer avenues like direct sales and consignment to help convert excess parts into cash. One can develop an in-house trading department as suggested by Barry W Startz, or team up with a consignment company. Alternatively, Airlines and MROs could share stocks to generate more stock rotation/consumption, as suggested by Armando Filho. Carlos Garofalo is keen to point out that irrespective of any choice regarding the disposal of excess inventory, "The main idea is to maximize a return in trade of resources and time, because surplus can be non-working capital, which we all want to avoid." Randal Richey also provides sound advice. "Airlines and MROs have several options, but not all are equal. The best solution is tailored to individual corporate goals. One company may seek a quick cash infusion via package sales and turn to a trusted USM marketing partner that becomes their routine, established outlet for their surplus inventory. Additionally, the inventory owner may issue an RFP and invite customers to bid on a package of excess parts, or even whole assets. Others may have a longer-term approach that seeks to maximise returns via a consignment and re-distribution model."

Carlos Garofalo, Manager of Asset Life Cycle and Components, AMROS Global

Meanwhile, Mike Cazaz sees a clear choice. "There are usually two common options: outright sale as a package or consignment sale. Each option has its own advantages and disadvantages. The main difference between the two is, get your money upfront vs. betting on getting possibly more money over a longer period of time. It is up to the owner of the inventory to prioritise their preferences and decide which option to choose." Lindsay Cooper expands further on this: "As mentioned, one approach is to sell the surplus on a consignment basis, where the inventory is handed over to a third party who specialises in selling aviation parts. This is particularly useful when the third party can access markets or regions where the original owner does not have a strong presence. For example, AJW Group has extensive market reach and specialist knowledge, but generally we don't consign our inventory unless it offers access to a different market sector. However, other MROs might choose to consign their inventory to us if they lack the expertise or market access to sell the parts themselves."

Randal Richey, VP Programs, VAS Aero Services

When it comes to choosing which method to dispose of excess inventory, James Grey, Director of Sales & Purchasing at EirTrade Aviation advises that: "There are several options, but in our opinion the best is to work with a strategic partner in the USM market, such as EirTrade. Selling surplus spare parts outright is often the most lucrative and efficient option for airlines looking to monetise their inventory. The resale of high-value components like core engine parts, LRUs and avionics can quickly free up capital and reduce storage / maintenance costs." There are a number of companies with a very strong history of working with partners through consignment programmes, where the airline or lessor continues to hold ownership while those companies market and sell the excess stock on their behalf. This approach is something of a slower burn compared to an immediate outright sale, but it allows the companies to maximise the owner's returns by leveraging their market expertise and network. By

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using a specific third party to handle the entire sales process, airlines/MROs/ Lessors can continue to focus on their core operations while benefiting from optimised sales and higher returns.

Ray Kane is very much in favour of one particular option for monetising surplus inventory, and that is a consignment partner. "Consignment partners are ideal as storage cost is eliminated whilst payment for the service is proportionate at the point of component sale. They also take care of the entire handling and sales process, from packaging, marketing, and shipping," he advocates. This is backed up by Nigel Christie as he explains: "GA Telesis has developed consignment programs over the years that have generated over US$1 billion of dollars returned to the airlines/MROs/ lessors for their surplus inventory. We provide a single solution for all current and future surplus, be it components, engine material, or through the disassembly of whole assets. GA Telesis takes responsibility for moving all the inventory to our global distribution centres, investing in repairs where needed, and marketing and selling the material while having minimal impact on the airline's resources."

Greg Creekmore touches on most of the common solutions, but also comes up with some interesting options, identifying direct selling, consignment, online marketplaces, auctioning, trade-in deals, scrap and recycling, and finally leasing, saying that "a combination of these methods can optimise returns while efficiently managing surplus inventory." However, Sarah Klein has identified another critical element which is essential for positive results when choosing to work with an outside agency. "A strong partnership fosters a deeper understanding of each party's needs, enhances collaboration, and leads to more effective inventory management and mutually beneficial relationships," she says, adding that: "At Setna iO, for example, we provide a direct pipeline to a broad network, enabling airlines and MROs to quickly turn surplus inventory into revenue."

Which parts have no value in the surplus inventory market

It is accepted that usually, pre-modified or obsolete parts are the hardest to sell, either with targeted sales campaigns or through consignments. If you don't have any kind of buyback programme with OEM/ distributors, those parts are the ones that will be scrapped in the end. Armando Filho recommends: "It's worthwhile talking to an expert about this, at Vallair we have a strong focus on extending the file and value of aircraft assets, including parts." Randal Richey at VAS Aero Services is extremely positive and believes that all parts have a value. "The good news is there is a market for most materials. In some cases, this may be a rather small market with niche players or creative recycling for sustainability, but the world of USM aftermarket marketing and sales can assist with most material types. The key to value recovery is addressing the market's need for quality and regulatory compliance with all materials." Along the same lines, though approaching the 'problem' from two different angles, Mike Cazaz at Werner Aero sees that if you think beyond the obvious, there's always a demand for all aircraft parts. "There are parts that have been obsolete, like some avionics and some parts that support aircraft that are no longer in service. That is assuming we are talking about use for aircraft operations because there are ways to monetise some parts outside of aviation, like using them as furniture for example." Along the same resourceful lines, Nigel Christie at GA Telesis sees every aircraft part that has been manufactured as being of value save for BFE Chapter 25 material.

In truth the answer to the question lies within as the question relates to the surplus inventory market, not 'a marketplace' in general. Consequently, as Lindsay Cooper at AJW Group points out, "if older aircraft are no longer flying, the demand for their parts is no longer there, making the inventory for these aircraft obsolete with no market value," while Carlos Garofalo at AMROS Global makes reference to aircraft parts which have a 'shelf life' and which become obsolete if they can't be offered back to the OEMs. He is backed up by James Grey at EirTrade Aviation who explains that "Expired or outdated components such as batteries, oxygen generators, or emergency slides lose their value once they reach the end of their service life. Even if these parts are physically intact, once they hit their expiration date they are deemed essentially scrap." He explains further that: "Unserviceable, scrap or beyond economic repair (BER) parts often have little to no value, unless they can be cannibalised for usable subcomponents. However, there is a growing acceptance of PMA and DER repairs on certain material, usually where there is a problem with supply. In these cases, EirTrade has managed to salvage many potentially BER parts with outside of OEM repairs. This only works in certain cases though, and we are extremely careful to discuss with our partners/customers on which units are suitable for such repairs." Barry W Startz at TAT Trading and Leasing also makes a very valid point in saying that if there is an overabundance of certain parts, then consequently they have little to no value.

Beyond what has been mentioned above, Ray Kane at IBA has identified low-life, zero-life, life-limited and hard time parts, as well as certain aerostructure components such as flight control surfaces which are often in abundance as having no real value. Meanwhile, Greg Creekmore at ILS accepts that there are parts with no value in the surplus market but is keen to focus more on alternatives for recouping value such as recycling, where metals and other raw materials can be recycled to

Barry W Startz, Sr. Director, TAT Trading and Leasing TAT Piedmont Aviation Component Services

recover some of their intrinsic value. Then there are tax write-offs, where declaring the surplus inventory as a loss in financial reports can provide tax benefits. Finally, there is donations or repurposing, where there is the opportunity to donate parts for educational purposes or repurposing them for non-aeronautical uses—such as furniture, art, jewellery, and other creative applications. "Utilizing these methods can help recoup some value from an otherwise non-marketable surplus inventory," he comments.

What can be done to adjust supply chain or inventory management practices to minimise surplus inventory in the future?

The key element of inventory management is to predict a change in demand rather than having to react to it; in other words, be proactive as opposed to reactive. Companies should perhaps adopt a strategic, data-driven approach to supply chain and inventory management. This involves maintaining a careful balance between stock availability and market demand, ensuring inventory levels are optimised to prevent overstocking while still being prepared for unexpected disruptions. By continuously monitoring aging stock and streamlining decisions on what to monetise and when, companies can ultimately reduce surplus inventory. A further element is maintaining a robust technical record system.

The aviation industry depends on precise documentation to maintain safety, compliance, and financial value so it is essential to have accurate trace records to ensure parts are traceable, airworthy, and marketable. Without proper records, it becomes impossible to sell parts in this highly regulated and safety-conscious sector. For sellers, maintaining detailed records is not only about complying with regulations but also about protecting the value of their inventory and ensuring the safety of the entire aviation ecosystem. Lindsay Cooper explains further: "AJW is strategic about its inventory investment and as a result are better positioned to weather inevitable supply chain uncertainties. We proactively and continuously source products from teardowns to replenish inventory helping to meet our customer's needs and maintain steady parts supply. Maintenance and repair are crucial to operators to avoid AOG situations, so we try to gain a thorough understanding of our customer's needs to best plan our inventory levels." On top of this, Carlos Garofalo has identified two key areas – visibility and communication. "Visibility of the current and future stock, making sure there is an efficient and effective parts life cycle management; this can be achieved by digitalizing processes within the internal warehouse and planning functions. Communication with OEMs and vendors, to know first had how and when products are to evolve and what is really the reason and needs to have spares sitting on the shelf or contracted to pool providers," he explains.

Nigel Christie advises that through component inventory leasing of parts, "the airline or MRO can lease material from us anywhere from three to 12 years, knowing they can renew or return the inventory at the end of the term. The residual value risk remains with GA Telesis and protects the airline from a future surplus situation. It also helps with cash flow as the initial upfront investment in the components lies with us." Ray Kane is a proponent of "Access to parts rather than ownership is preferred, but this must be balanced with guaranteed availability of "No Go" items to avoid disruption." He adds that demand analysis to classify the importance of a component and its exchange frequency is key, while preventative maintenance programmes can address known issues and extend component lives, with the aim being to limit excess stockholding.

Greg Creekmore delves deep into the options available to help with minimising surplus inventory, including leveraging operational experiences, data analysis of past operational experiences to understand supply and demand trends by using internal sources, and external market intelligence from ILS, then adjusting inventory levels according to these insights. Like Mike Cazaz who believes that: "With AI technology coming into the global market, we will soon see airlines utilizing AI to predict their inventory usage which will provide better inventory management and significant cost reduction. AI technology is the future of our industry," Creekmore advises utilising advancements in AI, such as AI-driven predictive analytics to forecast demand more accurately and adjust inventory levels in real time. He also touches on supplier performance guarantees, a collaborative supply chain, just-in-time inventory and strategic overstocking. "By combining these practices, companies can create a more efficient and responsive supply chain, reducing the likelihood of surplus inventory and optimizing operational efficiency," he concludes.

In a similar vein, improving forecasting is crucial to inventory management—paying close attention to data patterns that signal shifts in demand and being agile in adjusting supply before these shifts have a significant impact. You cannot manage inventory on a macro-level. Details matter and inventory management requires daily attention. Additionally, centralising decision-making and implementing a comprehensive data strategy can provide a better path for demand planning. This approach helps in understanding fleet utilization, current inventory levels and locations, and maintenance trends, leading to more informed and strategic decisions that can prevent excess stock.

As Sarah Klein puts it: "Even with the best forecasts, some level of excess inventory is inevitable. This is why having an effective outlet for disposing of this surplus is imperative. This could involve partnering with aftermarket suppliers, like Setna iO, engaging in consignment programmes, or exploring other sales channels. By building partnerships within these channels, companies can ensure that surplus inventory is managed efficiently, reducing bottlenecks and freeing up space for more strategic and applicable inventory use."

Putting theory into practice is sometimes not so easy, but Barry W Startz presents two interesting ideas. "The best way I have found to minimise surplus inventory is to develop a supermarket strategy that is on the shop floor with the inventory levels needed to support the product just like the Produce section of a grocery store. This will keep the inventory from having any surplus," he explains. "Another good way to minimise surplus is to have a great ERP System that only allows inventory to be purchased based on the forecast and demand. An Analysis will also need to keep up on the customer demand based on the retirement schedule of the product," he adds. As an alternative suggestion, Armando Filho looks more towards a good stock management tool which "must be aligned with your enterprise resource planning (ERP). This can then consolidate your forecasted needs versus historical consumption, lead time, transit time, and actual stock to generate more reliable requests for purchasing and so on. Such data must be evaluated to eliminate wrong inputs/information because if you do not set up stringent filters before implementing the tool, you can still keep generating surplus. Inevitably a surplus will still occur, but this needs to be controlled and minimised through regular revisions to your ERP, inventory auditing, and so forth, to generate reliable information and improve efficiency to save costs."

Armando Filho, Director of Trading and Material Management, Vallair

Over the last decade there has been a cultural shift from the old norm of stocking everything that could possibly be needed, to having on-hand (or at your immediate disposal) only the most critical parts. Aircraft and engine manufacturers, along with their OEM partners, are doing their part at reducing excess and improving fleet reliability, thanks in some measure to aircraft CMS (Central Aircraft Maintenance Computer) systems. The CMS constantly monitors aircraft and engine systems in real time and provides maintenance data that is optimised and connected to the airlines' inventory management systems. Randal Richey points out that: "It is this full connectivity and advanced analytics that provide the optimal level of materials forecasting. While no single recipe exists, many common elements shape successful inventory management. This suite of solutions used to reduce inventory needs often includes Power by Hour (PBH) or other flight hour/component services programs, an onsite managed hardware and expendable materials solution and driven predictive analytics."

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It would seem that the landscape for effective parts inventory management is changing and, as a consequence, one of the greatest problems facing MROs and carriers, excess inventory, may soon be less of a problem. It is unlikely that it will disappear completely owing to the requirements to avoid AOG incidents through lack of provision for 'unforeseen circumstances or events', but it can be mitigated. Thanks to more effective strategies, the adoption of AI to streamline inventory management practices, and advancements in technology that provide more valuable data and real-time monitoring results, a more 'informed' approach can be taken when it comes to managing inventory, enabling businesses to operate in a more proactive as opposed to reactive manner.