Five Ways You're Losing Money With Parts Inventory Management And What You Can Do About It

Cloud-Based, Electronic Parts Management Means Material, Time, and Cost Savings

In aviation maintenance the parts utilized in the repair process can generate a profitable revenue stream. But that can be significantly impacted by the continued use of outmoded, paper-based, spreadsheet-based, or manual parts management and inventory systems.

"Today, the majority of small to medium size repair shops catering to general aviation airacraft are still using handwritten notes scribbled in pocket notebooks or on paper forms attached to clipboards for parts management – from the ordering process to the warehouse and ultimately the shop floor," said Bob Jones, Product Marketing Specialist for ATP in Brisbane, California. "In fact, I would estimate that some 80 percent of parts requested by mechanics – in many facilities – are made using a pencil and paper."

The problem with these manual parts management systems is that they generate avoidable costs, which are not always apparent, but nevertheless are there. **Here are five ways that these outmoded, manual parts management systems are generating avoidable costs for general aviation operations.**

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Five Ways Manual Parts Systems are Generating Avoidable Costs

1: Aging Parts

Slow-selling parts and components have a propensity to pile up – out of sight, out of mind – taking up shelf space required for high-profit, high turn-over items. Aging parts also tie up valuable capital and create a lower return on investment. Over time, manual parts tracking tends to provide diminishing oversight of any aging material, leading to shortages and, ultimately, increased disposal costs as the material ages into obsolescence or reaches its life limits.

2: Undocumented Material

Every maintenance shop runs the risk of parts being removed from inventory without documentation. Sometimes, parts are not properly tracked because a responsible person, under pressure to complete a task on time, simply forgot to write down that an item was pulled from stock. Consequently, that part does not get billed out, and manual parts management processes are usually of little or no help with locating any information about the part in a timely fashion. In some cases, an undocumented part could require a mechanic or parts clerk to do a physical search, delaying completion of a repair job and taking valuable time away from performing or supporting airframe, engine or component repairs.

3: Incorrect Parts Selection

With manual systems, there is an increased probability that the wrong parts could be pulled from stock and sent to the shop floor or added to a purchase order. Among the primary reasons for this is worker shift-change, which almost always presents a communications challenge as one crew takes over from another, and a parts order, generated during the previous shift, gets lost in the process. Another is when an unexpected problem or "discrepancy repair requirement" is discovered. Since discrepancy repairs sometimes mandate the use of a part not normally kept in stock, the risk of error when ordering is greater with a paper-based or manual parts system.

The delivery of incorrect parts can often be traced to misinterpreting handwritten requisitions, which usually means that the wrong part will reach the shop floor. As a result, more productive time is consumed as the technician writes out a new request and waits for the correct part. The resulting delay can vary from as little as 15 minutes to research and verify the identity of the needed item in the parts catalog, to two or more days for reordering and delivery. That becomes especially critical when an aircraft is AOG, or the facility is being pressured by its customer to complete the work when promised. A business jet, for example, is not earning its keep while idle in a maintenance hangar.

4: Inadequate Stock

Paper-based systems do not have the capability to track inventory fluctuation by item, and in real time, or alert staff that specific parts supplies are reaching a critical level, and need to be reordered.

5: Negative Productivity

Manual inventory management systems require significant, time-consuming input from mechanics and supervisors, as well as parts department staff, disrupting both productivity and operational efficiency.

Transitioning to a Cloud-Based System Connected With the Repair Documentation

Because of the inherent problems associated with manual parts and inventory management systems, aircraft repair facilities can see tremendous benefits by transitioning to an electronic, cloud-based system for parts list generation, parts tracking and inventory management.

With a cloud-based, electronic system, a parts request can be created with just a few clicks using the original source documents, such as the IPC, and then transmitted to the parts department, within seconds, using any computer connected to the Internet. This eliminates the time consuming process involved with physically writing down the request and delivering it to the parts department, as well as the risk of misplacing the order, or interpreting the technician's handwriting.

Digital systems can electronically link parts requests to the airplane's or component's maintenance documentation as well as the work order, enabling instant verification that the requested part actually matches what the work order specifies. This ability to crosscheck the specific part with the work order and maintenance documents solves key problems inherent with paper-based or manual parts list and inventory management systems. These problems include the difficulty in tracking individual parts quantity usage over time in order to determine just how much of a specific part to have in stock at all times, or during periods of high demand.

With digital, as opposed to manual oversight, there is an automated, holistic approach to the complete parts management function, enabling quick access to parts request lists, and order fulfillment status; making the entire parts management process, including requests for quotes (RFQ) and purchase orders (PO)s, highly visible and simple. This improves accuracy and standardizes processes to insure all steps are documented and complete. That translates into greater efficiencies, and, often, accelerated turn times for repair work.

Cloud computing is further revolutionizing parts requests and inventory management as more users are now free to use applications and information from any computer with Internet access – such as laptops out in the field. Since all software and information is stored and managed by the cloud-based service provider, users no longer have to worry about security, data corruption caused by viruses, computer theft, equipment malfunctions, software glitches, or increased Information Technology (IT) infrastructure. The provider of the service manages and updates all information stored online so that the users of the service, or their IT departments, don't have to – freeing up employee time to focus on other tasks.

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Electronic Parts Management and Inventory Systems in Use

Users that support digital solutions for repair parts management agree that sticking with paper-based or manual systems would mean higher head-counts, and reduced awareness of parts consumption, and little in the way of current data for forecasting and purchase planning.

For Sam Brant, Materials Manager for LJ Aviation, an FBO operator and aircraft management firm based at Arnold Palmer Regional Airport in Latrobe, Pennsylvania, electronically managing parts use dramatically reduces errors—especially when tracking the expiration dates of life-limited components and materials. LJ Aviation's maintenance operation focuses exclusively on the 30 turbine-powered business aircraft listed on its charter certificate.

"With a paper based system, there are not only handwriting (legibility) issues to contend with, but there may be carelessness when writing down certain information, especially when rotable parts are involved," Brant noted. "With an electronic system, the software automatically tracks that information and fills it in."

A digital system, said Brandt, can also provide real-time information as to the quantity of specific parts in inventory; unlike a paper based system, where data can be hours, days, or even months old. "When parts status information is not current, work being done could be disrupted because you may have to order a part and deal with shipping cut-off and transit times," he said.

Brant added that if a part is lost or misplaced, a digital system will help identify the item so that some type of remedial action can be performed. "If a lost or misplaced part is recorded on paper, the paper, itself, can also get lost."

At Loyd's Aircraft Maintenance at Meadows Field in Bakersfield, California, Bill Long, the company's Vice President Sales, reported that electronic parts management can make a significant difference with the support of aircraft long out of production. The facility, he explained, caters to a broad base of general aviation airframes, from single-engine piston-driven models through light business jets.

"We work on a lot of older general aviation aircraft which often requires a very extensive search among the vendors in our data base," Long noted. "As aircraft age, many no longer have manufacturer support, and you often have to beat the bushes more to get the part you need. This is where electronic systems really work well."

Once the parts are located, Long (electronically) generates a purchase order, and at the same time, specifies the work order number for the particular job involved with that purchase order. "This ties the work order and purchase order together," Long explained. "When the part arrives, it automatically closes the purchase order, which verifies that the part was received. With this (automatic) verification we can bill for it."

An electronic system, he said, also enables the user to generate – within minutes – a detailed listing with every line item used, as well as any action taken to perform the job, itself. "This gives the customer a very concise record that could not be done as fast or accurately using a manual system—which could take hours, if not days, to generate a comparable report. And then, you could still miss something."

Long also agreed that electronic parts management systems make for better planning. "I am always looking at the historical

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parts sales trends to see what is moving and what isn't. Since electronic tracking is much more efficient, I don't have to lay out money for inventory that isn't moving, and I am also saving on parts storage costs."

The airline industry provides valuable experience that illustrates how electronic parts management solutions can be used to support general aviation operations. At Dallas-based Southwest Airlines, Peter Requa, Director of Supply Chain Management, reported that almost 100 percent of the carrier's parts inventory control is now electronic.

"Without a digital system, significantly more staff and a higher volume of inventory would be needed for the same service level. And, I would not have nearly as good an idea of what parts stocking levels would be needed," Requa said. "Also, it lets us know what our vendor performance and costs have been, which gives us some leverage when negotiating with our suppliers, as well as contract enforcement."

Along with that, digital systems can be a game changer when tracking part or component performance, especially in cases of multiple failure rates. "With an electronic system, we are able to identify the specific part serial number, and to determine if the unit, itself, is bad or if we have to dig a bit deeper to see if there's a problem with the airplane that's causing it to fail," Requa explained. "We have electronic reports that tell us, in real time, that a particular unit is coming off an aircraft multiple times,

and we do not have to do a tremendous amount of research through paper records to verify that."

Another advantage of an electronic system, Requa cited, involves quality control. He reported that all of the components that come back from a vendor, marked as "repaired," go through a quality inspector who uses an electronic checklist to assure that the repair has been made correctly, and that the part can be put back into service.

"Because it is electronic, the checklist can be updated or modified any time," Requa said. "You also get an electronic record that the quality control inspection was accomplished."

He also agreed that handwriting is an inherent problem with manual systems, with the transposing of part numbers a major issue. "If you use an electronic system and transpose a part number, or make (a similar) error, the system will catch it, and immediately alert the user that the particular part number does not exist. Of course, if you us a manual system, there is a tremendous amount of research involved before this is found out."

For an airline the size of Southwest, Requa made another point in favor of digital parts management. "Frankly, I can't imagine what it would take, in terms of physical storage space, to maintain all of the paperwork that would be required using a manual system."

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The Cost-Effective Solution for General Aviation

As major air carriers have embraced digital parts management, so is there a trend in that direction by the general aviation maintenance community, which wants the advantages a digital, online system provides, without having to invest in costly enterprise software or information technology infrastructure. To meet that demand, ATP developed the cloud-based PartsConnect™ Inventory Management App as an add-on to its ATP Aviation Hub™ Online Service. The only system of its kind specifically designed for the general aviation maintenance, repair and overhaul market, the PartsConnect App was purpose built to integrate parts inventory management with the maintenance manuals and illustrated parts catalogs (IPC) in the subscriber's ATP-hosted libraries, incorporating a simple, seamless design for easily viewable parts requests.

While the primary objective was to develop an application that would be joined to and work in tandem with the electronic maintenance manuals and parts catalogs, ATP went further, providing for electronic parts lists, RFQ and PO generation, and the capability to manage the entire parts tracking process from parts list creation, to ordering, to management of inventory.

For both the mechanic and the parts manager the PartsConnect Inventory Management App from ATP provides a big picture view of the entire inventory management and parts process; as well as vastly improved work scope planning, oversight and reporting. The result is better parts cost control, a smoother work flow in which the correct parts are delivered when needed, and the customer's airplane emerges from the maintenance hangar – when promised.

# About the PartsConnect™ Inventory Management App

There are many advantages to using the PartsConnect™ Inventory Management App from ATP. Supporting your entire parts lifecycle, the PartsConnect App is a simple, easy to use, online system that improves accuracy, speeds up maintenance times, increases productivity, improves business processes and communication, and increases efficiency.

The PartsConnect App is the first and only parts inventory solution that is fully integrated with the world's largest single source for OEM technical publications in the same online platform you are already using, the industry leading ATP Aviation Hub™ Online Service. Available for a low, annual subscription costs, you can save money and reduce the amount of time you spend managing parts requests, parts orders and inventory.

The integration of this solution with the cloud-based ATP Aviation Hub™ Online Service provides a seamless and consistent user experience for ATP customers, making it easy to deploy and adopt. The PartsConnect Hub App is designed to support any size operation, from small, single location businesses to very large FBOs with multiple locations. Subscribers have the ability to assign users and customize how the App appears and behaves so that it complements your current business processes.

To learn more about the PartsConnect Inventory App and how it can help increase productivity, improve efficiency and reduce costs for your maintenance operation, visit

www.atp.com/partsconnect
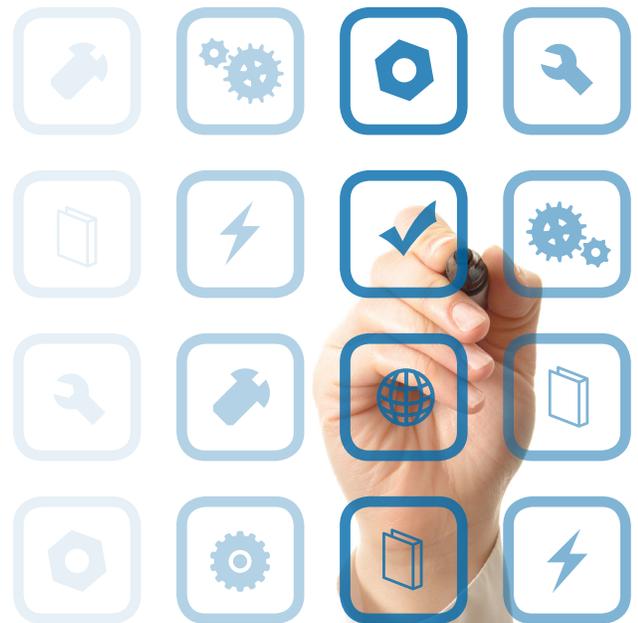
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**Contact ATP today to learn more about the
ATP Aviation Hub™ Online Service and the PartsConnect™ Inventory Management App.**

ATP
101 South Hill Drive,
Brisbane, CA 94005
U.S. and Canada: 800-227-4610
Worldwide: (+1) 415-330-9500

sales@atp.com
www.atp.com