

The Component Inventory Pooling Solution to Tap New Sources of Cash

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As North American airlines struggle to boost liquidity, one promising source of cash is tapping the component pool, either through an inventory sale-leaseback or through rotatable/repairable pooling. European carriers have a broader experience in component pooling, from which North American carriers can learn and create substantial value.



Over the past 24 months, airlines have experienced a roller coaster ride of the credit crunch, post-merger integration, record fuel costs, plunging fuel costs, and finally a steep decline in customer demand, especially for premium seats. The consequences of these conditions have been bankruptcies, system-wide capacity cuts, fleet reductions, job losses, and general industry turmoil. Airlines are once again searching for liquidity, this time finding conventional sources of capital unavailable.

With current credit market conditions still uncertain, CFOs need to become more creative when turning hard balance sheet assets into desperately needed cash without mortgaging their future. With many assets tapped out, the operation will need to work differently in order to allow non-cash assets to exit the balance sheet altogether, rather than simply being financed differently.

One under-appreciated approach is accessing the value of an airline's component pool. This can take the form of outsourcing an airline's rotatable/repairable inventory to a dedicated asset manager, or the more drastic measure of a sale-leaseback of inventory to a financial institution. Traditional sale leaseback programs in North America, however, have been overly focused on financing elements of the transaction, with less focus on optimizing the amount of underlying inventory held. Lasting value creation comes from optimizing both financial and operational elements of the transaction. To that end, this is a favorable time for airlines to address roadblocks to pooling, and at the same time for asset managers to aggressively pursue large airlines.

The Current Liquidity Context

Moves to raise liquidity were initially spurred by the need to pay for record-high fuel bills. Even though fuel prices have eased, several factors continue to stress airline balance sheets: the need for capital to purchase new aircraft and equipment; collateral requirements for fuel hedging contracts; and imminently maturing debt and capital lease obligations. These factors typically would not require airlines to accumulate cash on their balance sheets, but given the continued problems with credit markets, airlines have been required to tap their own cash reserves.

More troubling is another factor: uncertain future cash flow concerns. Airlines have been cutting capacity significantly in recent months through fleet reductions, schedule restructuring, and temporary grounding of aircraft, yet these reductions have not quite kept pace with drops in air travel demand. Between September and November of 2008, capacity was reduced by 6.2% while demand fell by 7.1%, compared to the same period in 2007. While these capacity reductions have dampened the negative effect on cash positions, "sticky" structural costs and continuing deterioration in demand through 2009 will leave many carriers searching for means to rebuild cash balances.

Tapping Component Inventory Through Two Options

With non-traditional sources of credit beginning to dwindle, North American airlines are beginning to consider their component inventories as an asset that can be monetized. Rotable/repairable component inventories typically represent several hundred million dollars in value for a developed airline, with the largest airlines carrying as much as \$700 million in rotatable/repairable inventory. These assets could be tapped through a pooling arrangement and/or by conducting a sale-leaseback of component inventories. While both options generate cash, pooling arrangements have the added benefit of overall cost savings and service improvements. Let's explore each in turn.

Component Inventory Sale-Leaseback

Under this arrangement, the inventory of rotatable/repairable components would not physically change hands (and hence not require any structural reorganization), but the part inventory would ultimately be owned by a third party. Like a typical sale-leaseback of an entire aircraft, the third party would pay an upfront sum to purchase the inventory but then lock in the airline to a multi-year rental/lease agreement for that body of inventory.

This does introduce additional complexity compared to the sale-leaseback of a whole aircraft. And it is purely a financial play for cash and liquidity, doing little to nothing to improve the management and optimization of the underlying asset base. In North

America, most such transactions have focused on this financing aspect and have proven costly and complex to manage when compared to more traditional sources of capital.

Component Inventory Pooling

Pooling has been implemented on a large scale in Europe. Some North American low-cost carriers and regional airlines such as JetBlue and Mesa rely on spares from a pool, but typically, larger North American airlines have until recently been reluctant to relinquish control of their inventories. Oliver Wyman’s most recent maintenance, repair, and overhaul (MRO) survey indicates that material and part availability was the top issue, with 82% of respondents citing that concern, even beating out capital expenditure limitations and supplier management. This translates into greater interest on behalf of airlines in parts-pooling-related offerings by MRO providers, as shown in Exhibit 1; the trend is growing as North American carriers begin to look more closely at what their European counterparts have been doing for years.

The European aviation community has embraced the idea of pooling inventories. Almost every component maintenance contract signed in Europe over the past several years has involved access to a component pool. While some European legacy carriers maintain non-pooled inventory stock, most major carriers

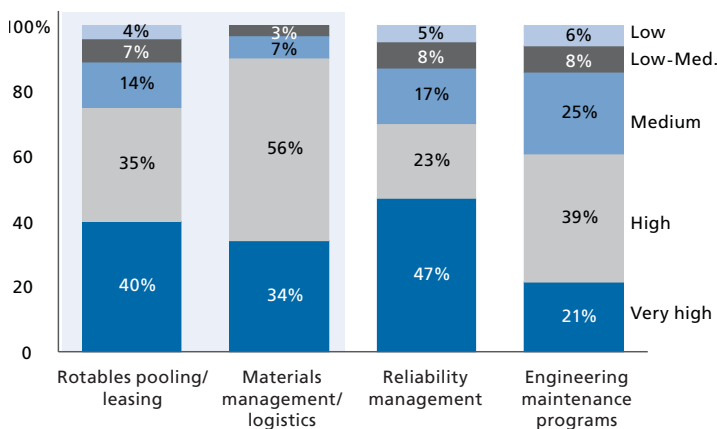
that outsource all or large portions of their component maintenance participate in component pools. Torsten Tamm, Executive Vice President of Global Supply Chain Management for SR Technics in Zurich, observes: “Our European customers more often than not want some type of component pool access, which in the current economic environment is increasingly tied to taking inventory off their balance sheets. Historically, the supply chain solution drove the decision; now liquidity is a larger part of the equation.”

European carriers have appreciated the balance sheet benefits of entering into component pools, with the cash-raising often a secondary benefit. Our experience suggests that carriers entering into pool arrangements gain in two ways. First, from access to professional and dedicated inventory managers who solely invest in and use leading tools and parts-trading expertise to manage the inventory base. Over the years, airlines have generally not invested heavily in information technology and other inventory management systems to effectively manage their assets. As a result, they’ve become saddled with bloated and unfocused asset bases—too much non-critical inventory and too little critical inventory. In Oliver Wyman’s 2008 MRO Survey, 73% of airline respondents believed that their inventory planning processes were insufficient to meet airline goals, and 95% of airline respondents said that only basic analytics are used to plan their inventory levels.

Another benefit is increased scale, even for large legacy carriers or those that manage their rotatable pool efficiently; incremental benefits through scale can be reached when pooling inventory across carriers, particularly on slow-moving but critical parts.

Exhibit 1 Importance of MRO offerings

Relative importance to airlines



Source: Oliver Wyman/Aviation Week & Space Technology MRO Study of 84 airlines, 2008

Overcoming the Obstacles to Component Pools

North American carriers have, to date, not embraced pooling enthusiastically because of four major obstacles. Yet each of these, which we explore below, has readily available solutions.

Mixed and Aging Fleets Held to Varying Maintenance Specifications

North American carriers have a plethora of fleets and multitude of maintenance standards. They’ve tried to increase the reliability of their components

by amending procedures in the Original Equipment Manufacturer's Component Maintenance Manual (CMM) and introducing custom modifications. While these program changes have benefits on a micro level (such as reliability improvement and repair cost reductions), the adverse macro effects tend to go unmeasured. One is the added engineering costs to establish and maintain unique repair specifications; another is the potential for an overzealous application of unique repairs for an ever-decreasing or ultimately negative net benefit. In addition, there is substantial added complexity in sourcing components with unique repair specifications that must be sent to suppliers rather than relying on the latest revisions to CMMs. Complexity leads to fewer and less rigorous sourcing efforts and, therefore, higher component repair costs as time-constrained purchasing departments select other, less administratively complex projects.

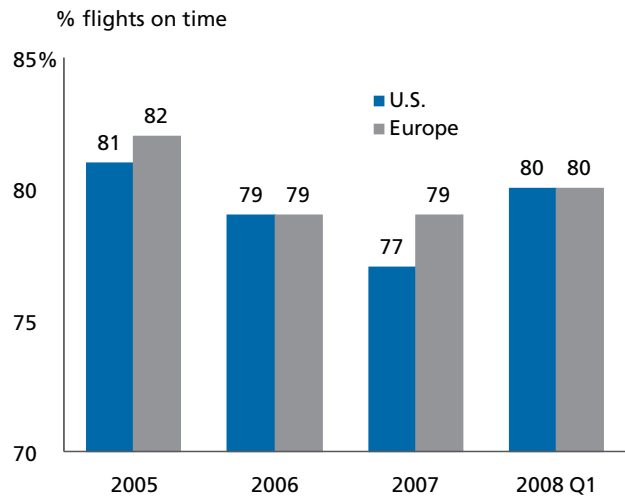
Maintenance controllers should recognize that a unique maintenance program is not the only way to boost the overall reliability of the fleet. If carriers followed CMM specifications more closely, they could achieve the same dispatch reliability through better component availability offered by a pool. Even if part reliability were to drop, pool providers can be held to a service level equal to or greater than current dispatch reliability. Pool providers are able to monitor and manage reliability across the entire pool more easily when all parts match one configuration. "We see declining customization of CMMs in the market which certainly helps transition to a pool," says Tamm of SR Technics. "Those who have modified maintenance procedures on certain components will either leave them out of the pool agreement or convert back to a standardized maintenance program."

Loss of Logistical Control

The second obstacle to pooling is the perception that without airlines' direct control over inventory stock, performance levels would suffer and dispatch controllers would be hamstrung by an inability to track parts and directly control their routing. In turning to a pool, airlines fear that their provider would not feel the same urgency, and part delivery performance and the ability to track parts would suffer.

These fears have been mostly unfounded. In Europe, where airports and networks are even more crowded than in North America, service levels have not suffered and in most cases have increased through pooling (Exhibit 2).

Exhibit 2 On-time arrivals



Sources: U.S. data – www.transtats.bts.gov. Carriers include: Air Tran, American, Continental, Delta, Frontier, Northwest Airlines, Southwest Airlines, JetBlue, US Airways (with America West for earlier reporting), United Airlines
European data – www.aea.ba. Carriers include: Air France, KLM, SAS, Lufthansa

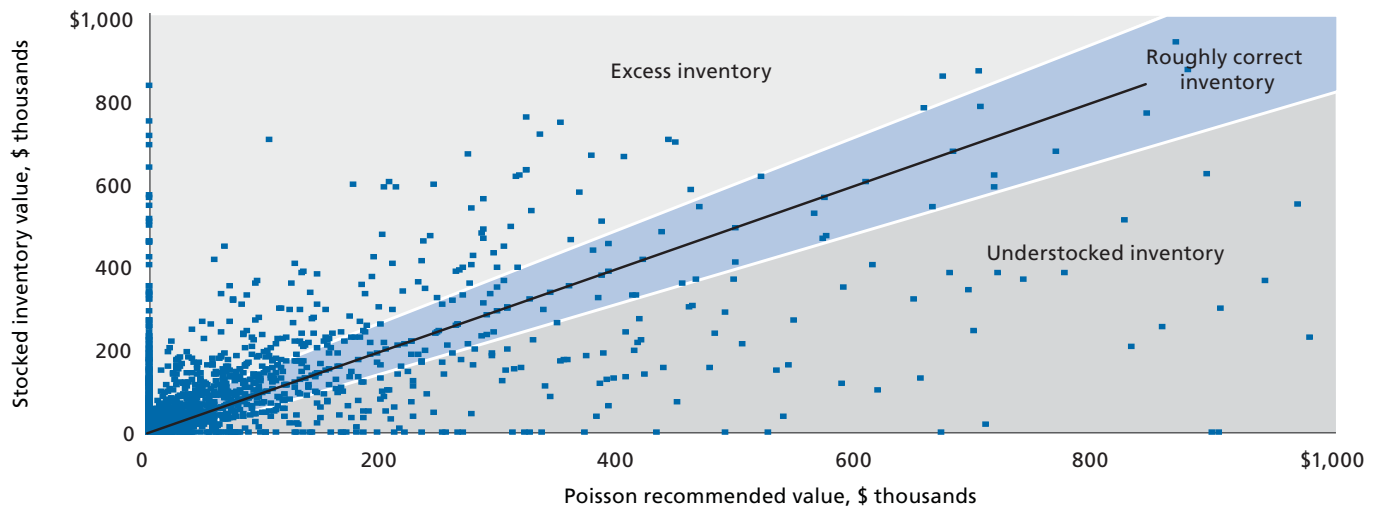
The main reason behind service-level improvements is the pairing of delivery key performance indicators (KPIs) to allowable fees in the agreement signed between airline and pool provider. Tamm sums up his experience: "Our business is ensuring that our customers have parts; otherwise, the value proposition of the pool evaporates and customers will find other solutions. Our customers are simply asking for availability. Thus, you have to spend a fair amount of time up front establishing SLAs [service level agreements] and understanding what different levels mean for dispatch reliability." By aligning incentives appropriately with their pool providers, airlines have been able to drive their suppliers to equal or better the performance previously attained by their internal material control functions.

Inability to Benefit from Economies of Scale

Large North American airlines believe they would not benefit from the economies of scale offered by a pool. However, there are a significant number of costly, slow-moving parts for which even large car-

Exhibit 3 Stocked inventory holding vs. Poisson approach

Based on a sample of 2,000 parts



Source: Oliver Wyman analysis, disguised example

riers would benefit from pooling. Oliver Wyman's work with sizeable North American carriers indicates that nearly 35% of total inventory value is slow-moving. Pooling benefits on these parts alone would be substantial for most large carriers. As shown in an analysis of one carrier in Exhibit 3, it is difficult for airlines to match usage levels with inventory stock levels if the majority of parts fall outside of reasonable deviations from predicted inventory levels.

As a result, there is a substantial amount of parts that are either overstocked and represent slow-moving inventory, or understocked and potentially contributing to lower operational reliability. "We typically find," notes Tamm, "when running our inventory models that even our larger customers require a share of the pool that's lower than their historical inventory levels, because of our aggressive management of the pool, sharing of minimally stocked parts, and our inventory optimization techniques."

Presence of an Internal Airline MRO Operation

Airlines worry that by moving to a pool arrangement, they would effectively make their internal MROs irrelevant. While the rotatable/repairable inventory management division of an internal MRO would likely become obsolete under a pool, there is no rea-

son why the core function of the MRO—repair and overhaul activity—could not flourish. For these airlines, there are two potential structures that could be implemented to benefit from a pool and sustain a vibrant internal MRO, provided transportation and logistics costs were thoughtfully managed.

The first option is to flow all repair and overhaul activities through the airline MRO (Exhibit 4). All unserviceable components would flow through the MRO and then back to the component pool once serviceable again. Under this arrangement, the pool manager would only be responsible for managing the pool inventory and ensuring that components are properly delivered on time to the order points. Consequently, the pool manager would not be aware of any costs stemming from R&O activity—a key piece of proprietary data for MROs.

The second option for airlines is to use the pooling arrangement not only for management of rotatable/repairable spare parts, but also as a maintenance integrator. The pool manager would receive unserviceable parts and then route them to a third-party MRO provider or back to the airline MRO for maintenance. The airline MRO could retain as much or as little work as it desired, while the rest would be routed to the third party. A number of cost scenarios

Exhibit 4 **Organizational structure 1: R&O flow through MRO**

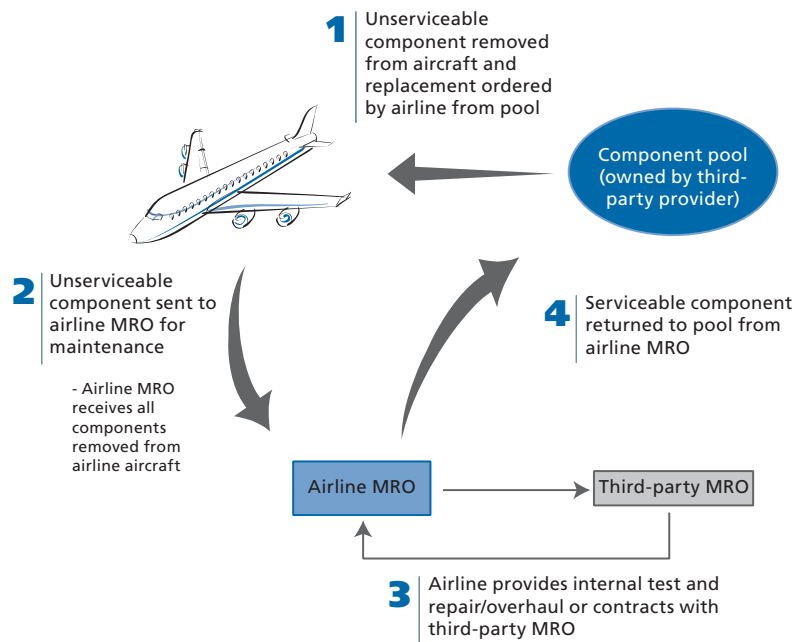
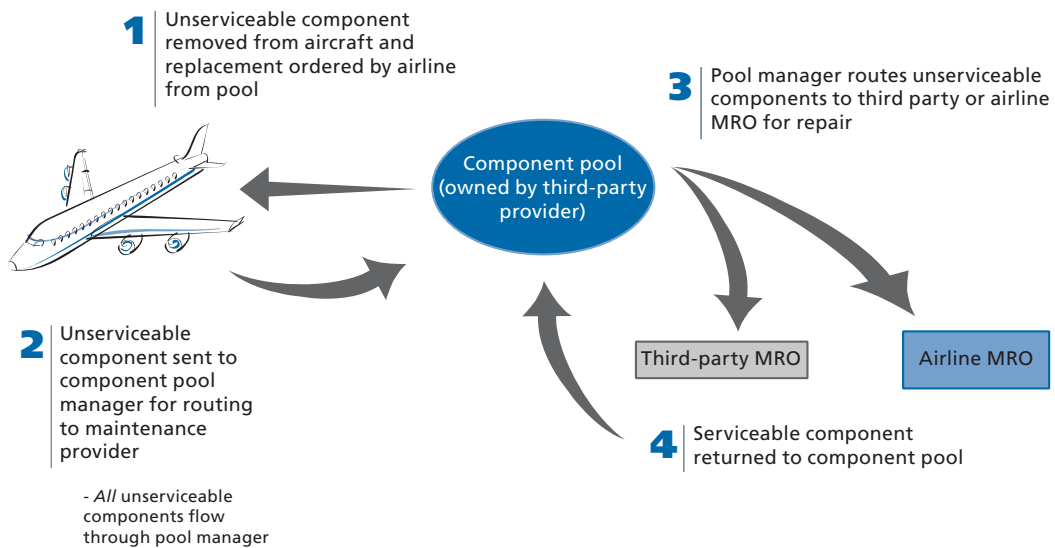


Exhibit 5 **Organizational structure 2: R&O flow through pool manager**



Source: Oliver Wyman

are possible, with the airline being billed for maintenance directly from the suppliers, or the pool manager consolidating and managing all third-party maintenance costs and passing a single invoice to the airline through any number of contractual arrangement options (e.g., flight hour, fixed cost per repair, T&M).

Several different structures could be implemented to ensure the continued relevance of an airline MRO. Furthermore, if several large airlines with MROs entered into the same pool, MROs could see a net increase in their business, with the component pool manager giving sourcing preference for “third-party” repair work to other MROs within the pooling program.

There is no fundamental reason to think that pooling is only possible in Europe or among small-scale carriers in the United States. Rather, pooling makes more sense than ever for carriers in the United States, Canada, and Mexico. By entering into a pool, these carriers would accomplish a number of worthy financial and operational objectives that largely outweigh the loss of control and maintenance customization benefits perceived by airlines. Among the benefits are these:

- **More cash and less inventory.** Airlines would convert inventory to cash on the balance sheet by selling components to a pool manager, which would optimize the inventory with other customers and sell off or manage down the pool inventory to a more optimal level given customer service levels and locations.
- **Lower management costs.** While airlines would incur pool access fees and need well-defined oversight, they would reduce their overall internal department staff costs, expedite fees, borrow fees, and inventory management software license fees associated with owning and managing their own pool.

- **Lower maintenance costs.** For airlines willing to allow the pool manager to determine the optimal repair and overhaul provider, larger volumes suggest more efficient repair processes and more competitive bidding on the actual repairs.
- **More in-house repair opportunities.** Airlines that perform repairs in-house would likely gain access to repairs they may not have had before, as the pool manager leverages repair volumes and puts them out for contract.
- **Same or better maintenance reliability.** All airlines, especially as the pool of customers and components grows, should see an improvement in reliability.

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Airlines need to dig deeper into their operations and reduce asset intensity. CFOs are being asked to perform financial magic on ever-strained balance sheets, most often at times when it is least valuable. Shifting massive amounts of inventory to pool managers—up to \$1 million per aircraft or \$700 million total for the largest U.S. airlines—should become a high priority. Doing so will create leaner balance sheets with more cash and less hard-to-manage inventory.

No doubt these changes will take a major effort to design and implement. So did tactical moves taken some years ago, such as checked bag charges, onboard food sales, seating surcharges, even higher boarding status. Today, these practices are commonplace. The economic crisis could prove a similar catalyst for innovative pooling practices, to the great benefit of North American carriers. ❖

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The Aviation, Aerospace & Defense Practice

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