THE SHIFTING LANDSCAPE for THE MAINTENANCE, REPAIR AND OVERHAUL MARKET
The BlackArch Partners Aerospace, Defense and Government Services (ADGS) team continuously monitors the international aerospace industry for key developments that impact our clients. Foremost among the recent developments we are seeing is the shifting landscape in the North American aircraft maintenance, repair and overhaul (MRO) market. These evolving dynamics have prompted significant discussion at BlackArch Partners that we would like to share with our readers. First, we will assess the current state of the North American MRO market and then we will share our thoughts on the market-changing trends we are seeing in the North American MRO space.

The North American fleet is forecasted to add roughly 3,700 new aircraft over the next 10 years, with the vast majority of these aircraft serving as replacements to existing aircraft. This fleet replacement trend coupled with the premise that newer aircraft generally require less maintenance could dampen growth, however, we see airlines’ transition to a younger fleet as a more gradual process with some significant rollout delays. Although the MRO market is relatively mature, several key trends could continue to develop over the next decade to create opportunities for independent MRO providers:

1) Surge in retired aircraft will increase used parts supply and lower input costs
2) Higher growth in the non-engine components maintenance sector
3) Return of wide-body “heavy checks” to North America
4) Increased use of composite material and digital data collection in airframe maintenance
5) Line maintenance opportunities in “out-of-network” regional geographies
6) Original Equipment Manufacturer (OEM) focus in engine maintenance
7) Higher growth in international MRO markets
8) Consolidation of the North American fleet to 10 primary aircraft models
Chart A: North American MRO by Sector:

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<thead>
<tr>
<th>Sector</th>
<th>Description</th>
<th>Observations</th>
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<tbody>
<tr>
<td>Non-Engine Components</td>
<td>Involves maintenance, repair and overhaul of non-engine components such as flight controls and fuel systems</td>
<td>Fastest growing North American MRO sector due to increased overall flight hours and lack of significant efficiency improvements in non-engine components.</td>
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<tr>
<td>Maintenance</td>
<td>Slightly lower margin than engine maintenance with more labor intensity</td>
<td>Opportunity for significant margin improvement through used parts.</td>
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<td>Airframe Maintenance</td>
<td>Consists of lower frequency, detailed “heavy-check” airframe maintenance, repair and overhaul that typically removes an aircraft from service.</td>
<td>North American market has experienced shift of “heavy-check” MRO work to China and other Asian markets.</td>
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<tr>
<td>Line Maintenance</td>
<td>Consists of higher frequency, routine “A-check” airframe maintenance, repair and overhaul that typically occurs overnight or between flights</td>
<td>Significant opportunities exist for independent MROs than can service out-of-network regional geographies that are too cost prohibitive for airlines.</td>
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<td>Engine Maintenance</td>
<td>Generally involves off-wing maintenance, repair and overhaul that restores engine performance capability.</td>
<td>Growing OEM focus on engine maintenance packages to differentiate products and capture steady cash flow.</td>
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<td></td>
<td>High-margin MRO work with parts as the primary input cost</td>
<td>Focus on efficient engine design will decrease overall work but opportunities exist for significant margin improvement through used parts.</td>
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<td>OEMs have ~60% market share</td>
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**Trends in MRO**

1) **Surge in retired aircraft will increase used parts supply and lower input costs**

Over the last decade, the North American MRO market has been redefined by several key trends. Among these has been the rapid rise of used and refurbished parts in engine and non-engine components maintenance. In 2013, the aircraft used parts market was nearly $3.5 billion, and is expected to grow to nearly double that size over the next decade. A surge of retiring aircraft will dramatically increase the supply of used parts to meet a steep demand increase, as operators remain laser focused on cost reduction and seek to lower their maintenance spending. Over the past few years, non-engine components maintenance providers have achieved significant margin improvement and other competitive advantages by strategically positioning themselves to widely adopt the emerging used parts trend.
2) Higher growth in the non-engine components maintenance sector

In the non-engine components sector, independent providers hold a dominant market position, providing nearly half of the maintenance work on a number of components such as flight controls, fuel systems, hydraulics and landing gears. In contrast to the engine maintenance sector, OEMs currently provide less than one-third of the maintenance on nearly all component systems in the non-engine components maintenance sector. Moreover, the North American non-engine components market is projected to grow modestly over the coming decade as increased flight hours take a heavy toll on consumable aircraft components.

3) Return of wide-body “heavy checks” to North America

Another trend in the North American MRO market has been the increased outsourcing of airframe maintenance “heavy checks” to developing markets. The high labor costs associated with airframe maintenance has driven nearly two-thirds of North American wide-body airframe maintenance to China and other developing markets in Asia over the past decade. Rising labor costs in developing markets coupled with the low likelihood of upward wage pressure domestically have historically brought outsourced work back to North America. With this in mind, many North American independent MRO providers are building out additional expertise and infrastructure in North America to execute a wave of comprehensive wide-body airframe maintenance.

4) Increased use of composite material and digital data collection in airframe maintenance

The airframe maintenance sector will also be heavily influenced by changing technology over the next decade. Increased use of composite material and digital data collection on airframes will fundamentally change the way MRO providers operate. Independent MROs are already investing heavily to incorporate new technologies into processes that will significantly improve their margins and achieve some scalability in what has traditionally been a labor intensive sector.

5) Line maintenance opportunities in “out-of-network” regional geographies

Line maintenance is distinct from airframe maintenance in that it does not remove commercial aircraft from service and includes more routine pre-flight and daily checks. Although airlines outsource the majority of their airframe maintenance, they complete most of their line maintenance operations in-house. For many airlines, however, completing line maintenance at “out-of-network” remote regional airports is often too costly. Recently, independent MROs specializing in used parts and technologically capable line maintenance in more “out-of-network” regional locations have been successful.
6) **Original Equipment Manufacturer (OEM) focus in engine maintenance**

In recent years, OEMs have increased their focus in the engine maintenance space, introducing one-stop-shop MRO maintenance into purchase contracts that provide flight hour cost savings for operators and steady streams of cash flow for OEMs. In 2014, OEMs will provide over half of the engine maintenance work in the North American MRO market, a trend that we believe will build as OEMs continue to rely on low pricing and comprehensive MRO offerings to win business. Although the North American engine maintenance market could shrink over the next decade due to improved engine design and efficiency, used parts capability and expertise will remain pivotal for independent MRO providers.

7) **Higher growth in international MRO markets**

While specific opportunities in line maintenance MRO exist in the North American market, broader MRO opportunities will present themselves in international markets over the coming decade. The international MRO market is expected to grow at more than double the rate of the North American MRO market over the next 10 years due to a rapid increase of aircraft in India, China and the Middle East. Historically, MROs that have positioned themselves in fast growing markets as both experienced and technology enabled providers have found competitive advantages.

8) **Consolidation of the North American fleet to 10 primary aircraft models**

Perhaps the most important trend in North American MRO over the next decade will be the development of a more top-heavy North American aircraft fleet. By 2024, maintenance of 10 aircraft models is expected to represent well over 80% of the total North American MRO market. Although two narrow-body aircraft models will dominate the MRO market, wide-body aircraft will still account for a majority of MRO work. Over the same period, MRO on older model aircraft will also climb rapidly as aircraft from older vintage years enjoy increasing economically useful lives. Positioning for this fleet shift and developing focused expertise will be pivotal for independent MRO providers.
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