

GLOBAL FLEET & MRO MARKET ECONOMIC ASSESSMENT 2015-2025

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PREPARED BY:

CAVOK

A DIVISION OF OLIVER WYMAN

2015 Global Air Transport

Fleet Size	23,927
2015-2025 Fleet Growth Rate	3.7%
MRO Market Size	\$67.1B
2015-2025 MRO Growth Rate	4.1%

2015 Business Aviation

Fleet Size	31,357
MRO Market Size	\$8.8B

2015 Global Civil MRO

Firms	4,743
Small/Medium Enterprises (SME)	79.8%
Maintenance Employees	278,073

2015 U.S. Civil MRO

Firms	4,023
Small/Medium Enterprises (SME)	84.2%
Maintenance Employees	141,707

2015 U.S. Economic Activity

Maintenance, Repair and Overhaul	\$19.0B
Parts Manufacturing/Distribution	\$24.2B
Total Economic Activity	\$43.2B



ARSA

TEAMSAI AND CAVOK JOIN FORCES

In 2013 the Aeronautical Repair Station Association (ARSA) announced a strategic partnership with TeamSAI, an aviation consulting firm specializing in strategic, tactical and operational management solutions. The relationship enabled the firms to combine ARSA’s industry knowledge and policy expertise with TeamSAI’s **betterinsight**[™] market intelligence service to create regular, high quality economic analyses of the global aviation maintenance sector.

As of February 2, 2015, CAVOK, the aviation technical services and consulting division of international consulting firm Oliver Wyman, has acquired and integrated TeamSAI into their business. The new CAVOK and its **betterinsight**[™] market intelligence service will continue to work with ARSA to provide critical information to make its members more effective managers and leaders, and help lawmakers, regulators, journalists, and voters better understand the economic consequences of policy decisions.

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EXECUTIVE SUMMARY

This report details CAVOK's 2015 assessment and ten-year outlook of the air transport maintenance, repair, and overhaul (MRO) market and a one year out look of the business aviation MRO market, starting with a review of global economic conditions, a key driver for the health of the industry. The global economy is expected to improve in the coming years, but concerns remain over the strength of the recovery. Generally, airlines operate with very thin margins with major cost drivers such as labor, maintenance, and fuel, greatly influencing financial performance. Operators are increasingly relentless in managing costs; with limited leverage over labor and fuel, airlines focus significant attention on managing maintenance expenses.

The global commercial air transport fleet stands at nearly 24,000 aircraft. Approximately one-third is domiciled in North America. Twenty percent is in Western Europe while Eastern Europe has five percent. Asia Pacific, China, and India combined have slightly more than a quarter of the world's fleet; however, the composition will be changing over the next ten years. The North American share is expected to experience a decline of seven percent; any net growth is limited by the large operators' significant re-fleeting efforts. The Asian markets anticipate the highest growth rates, representing opportunities for the MRO industry.

Globally, the 2015 air transport jet and turboprop MRO markets are expected to be \$67.1B, piercing the \$100B milestone by 2025. This represents a healthy 4.1% compound annual growth rate (CAGR). The airframe, engine, component, and line MRO market segments each have a different growth profile:

Airframe MRO 2015 forecast is \$14.5B, increasing to \$16.7B by 2025. This represents a 1.4% growth rate, the slowest MRO segment during the forecast period. Airlines and their affiliated maintenance providers maintain a solid hold on this market. The airframe MRO market is considered a low-margin, labor intensive segment.

Engine MRO is expected to be \$27.9B in 2015; growing at 5.3% annually it will reach \$46.8B by 2025. Unlike airframe MRO, the engine segment is largely contracted with the engine original equipment manufacturers (OEMs) having a large share of the market. Engine MROs, recognizing the value of the aftermarket, typically enjoy higher margin work.

Component MRO is forecast to be \$12.4B in 2015, growing to \$19.2B by 2025, representing a 4.4% annual growth rate. Like the engine MRO business, much of the component segment is contracted, though it varies greatly from one component type to the next. Similarly, the labor and material mix can vary.

Line MRO is pegged at \$12.3B in 2015 and forecast to grow at 3.7% annually to \$17.8B by 2025. The nature of line maintenance is less prone to contracting, and because the work is labor-intensive and subject to limited ground times in a scheduled operation, the opportunities to take advantage of economies of scale are limited.

An examination of the flow of maintenance work among and between regions reveals that North America contracts more airframe maintenance to the rest of the world than it provides to other regions. Engine maintenance, on the other hand, is just the opposite. North America supports other regions with more capacity and throughput than its region demands. Structural characteristics in the global economy such as labor rate differentials and complex supply chains have led to these trends; however, as the differentiators between developed and developing regions narrow, North America will be ripe to repatriate airframe maintenance currently contracted to other regions.

The business aviation fleet currently consists of nearly 31,400 aircraft requiring roughly \$8.8B in MRO market activity in 2015. Nearly 67% (17,814) of the business aviation fleet is domiciled in North America.

In terms of economic activity, MRO plays a significant role. In the United States, approximately 4,023 firms with more than 218,000 employees operate in the civil MRO market (including airline employees). Small and medium-sized enterprises (SME) account for 84% of these U.S. firms and 20% of all employees. There are 141,707 technicians in the U.S. and approximately 37% are certificated.