



Aeronautical Repair Station Association



2014 Global Air Transport:

Fleet size.....	23,010
2014-24 fleet growth rate.....	3.6%
MRO market.....	\$57.7B
2014-24 MRO growth rate.....	4.2%

2014 Global Civil MRO:

Firms.....	4,700+
Small/medium enterprises (SME).....	78%
Maintenance employees.....	473k

2014 U.S. Civil MRO:

Firms.....	4,000+
Small/medium enterprises (SME).....	84%
Maintenance employees.....	244k

2014 U.S. Economic Activity*:

Total.....	\$44.4B
MRO.....	\$21.3B
Parts Manufacturing/Distribution.....	\$23.1B

* includes business aviation

Global MRO Market Economic Assessment Air Transport

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EXECUTIVE SUMMARY

This report details TeamSAI's assessment and ten-year outlook of the air transport maintenance, repair, and overhaul (MRO) market starting with a review of global economic conditions, a key driver in the health of the industry. The global economy is expected to improve in the coming years, but concerns remain over the pace and complexion of this recovery. While no two airlines are the same, generally speaking, across the world and especially in North America, airlines operate with very thin margins. Thus, major cost drivers, such as labor, maintenance, and fuel, greatly influence their performance. Operators are relentless in their pursuit of managing these costs. With limited leverage over labor and fuel costs though, airlines are right to focus attention on the cost of maintenance.

The global air transport fleet in scheduled, commercial service and powered by jet and turboprop engines consists of more than 23,000 aircraft. Nearly one-third of this fleet is domiciled in North America. Twenty percent of the fleet is in Western Europe; Eastern Europe adds another 5%. Asia Pacific, including China and India, has more than a quarter of the world's fleet. But the fleet composition is changing. North America, which is undergoing significant re-fleeting, is expected to see its share decline, as its net growth is very limited in the ten-year horizon. Asia Pacific and other emerging regions are expected to see a greater share of the total fleet, and therefore, represent the MRO growth engines for the industry.

Globally, the air transport MRO market in 2014 is expected to be \$57.7B and grow to \$86.8B by 2024 (for jets and turboprops combined). This represents a healthy 4.2% compound annual growth rate (CAGR). The market segments of airframe, engine, component, and line MRO each have a different growth profile in the outlook:

Airframe MRO is forecast at \$11.5B for 2014. Nearly 30% of this spend is for aircraft based in North America. Airlines themselves and their affiliated third-party providers maintain a solid hold on this market based on publicly-announced contracts. The airframe MRO market typically is considered a low-margin, labor intensive segment.

Engine MRO is expected to be \$22.1B in 2014. More than 30% of this value is tied to North American operators. Unlike airframe MRO, engine MRO is largely contracted out and engine original equipment manufacturers (OEMs) have a large share of this market. Engine MROs, recognizing the value of the aftermarket, typically enjoy higher margin work which is also more material intensive.

Component MRO is forecast to be \$12.2B in 2014. Upwards of 35% of this spend is for North American aircraft. Like the engine MRO business, much of the component MRO market is contracted out, though it varies greatly from one component type to the next. Similarly, the labor/material mix can vary.

Line MRO is pegged at \$11.9B in 2014. North America represents 27% of the market. The nature of line maintenance makes it less prone to contracting; however, the potential to tap this market represents a significant opportunity in an otherwise slowly growing market. Of course, these opportunities may be limited to far flung airports. Because the work is labor-intensive, the opportunities to take advantage of economies of scale are constrained.

The commentary continues with an examination of the flow of work between regions which reveals that North America is a net importer of airframe maintenance but is a net exporter of engine MRO. Structural characteristics in the economy have led to these trends. However, as labor rate differentials between developed and developing regions narrow, North America will be ripe to reverse its status as a net importer of airframe maintenance. Similarly, engine and component OEMs—most common to North America and Western Europe—have relied heavily on their intellectual property to capture a greater share of their respective aftermarkets. OEMs will continue to gain ground as significant MRO providers in these areas during the forecast period.

In terms of economic activity, MRO plays a significant role. In the United States, nearly 4,100 firms with over 244,000 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 21% of all employees. There are over 143,000 technicians in the U.S. and approximately 37% are certificated.