



# The Aerospace Sector<sup>1</sup>

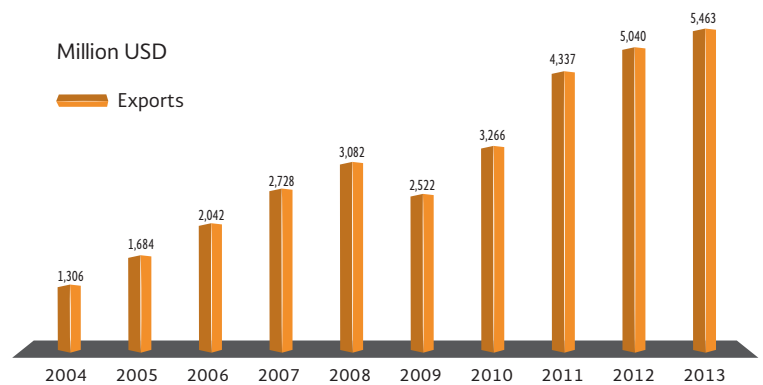
## In Mexico

Mexico has consolidated its aerospace sector as a global leader. It has recorded 17.2% annual growth in the last nine years. Currently, there are 287 companies and support entities in the country, most of which are NADCAP and AS9100 certified. They are located mainly in six states and employ more than 32,600 high level professionals.

## International Trade

By 2013, exports from the Mexican aerospace industry reached a value of 5.463 billion dollars.<sup>2</sup> According to estimates from the "Strategic Program of the Aerospace Industry 2010-2020," coordinated by the Ministry of Economy (SE), the industry is expected to export 12.26 billion dollars in 2020, with a 14% average annual growth rate.<sup>3</sup>

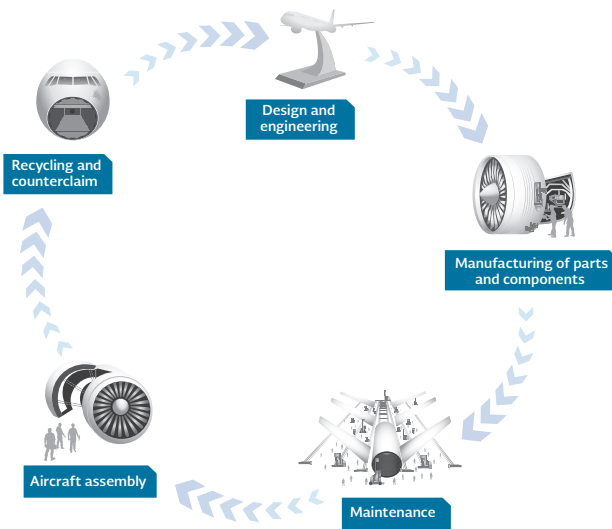
Graph 1. Aviation industry in Mexico



## National Strategy

The national strategy maintains its focus on turning Mexico into a destination that serves the complete cycle of an aircraft: from design and engineering; to part manufacturing and assembly; aircraft maintenance; and recycling and/or refurbishment of aircraft that have completed their lifecycle.

Graph 2. Parts manufacturing, aircraft assembly, overhaul, maintenance and recycling



## Regional Strategies

For the next development stage of the aerospace and defence (A+D) industry in Mexico, it was agreed to define strategies to identify and develop the production vocations of the country's aerospace clusters. To do so, the capabilities, specificity, existing industrial niches and prospective analysis of the various competitiveness poles in Mexico must be considered.

Graph 3. Main regions for Mexico's aerospace industry



### Chihuahua

Chihuahua's strategy is based on the maturity of the aerospace industry, which has enabled the state to attract strategic projects from the leading companies in high-technology dual and restricted use goods (particularly with its clear vocation for precision-machined products). The state's three main strategic milestones for the aerospace sector are:

- 2016:** To become Latin America's leading competitiveness pole in high technologies and dual-use goods.
- 2016:** To export 1.3 billion dollars, with a 30% surplus, that is, 20% annual growth and a 100% surplus increase.
- 2021:** To reduce its dependency on mold, tool and specialized services by 50% on current figures.

### Baja California

Baja California's strategy focuses on knowledge process outsourcing services (KPO) for the A+D industry. In addition, the state has the potential to develop fuselage systems and power plants, which will make it an important manufacturing supplier with integrated value chains.

- 2015:** It is an internationally competitive pole due to a high value productive ecosystem. VCO = export volume, export sophistication level, foreign direct investment (FDI) import substitution and local suppliers.
- 2020:** It is the main KPO export hub for the A+D industry in Mexico.
- 2025:** It triggers and coordinates actions to make Mexico the leader in Latin America in fuselage systems and high power by potency systems.

## Sonora

The state's strategy is based on the development of the supply chain, with a focus on innovation, mainly in turbine manufacturing, and the generation of specialized talent aimed on the industry's needs.<sup>4</sup>

The state plans to follow medium- and long-term strategies in order to become a global leader in turbine manufacturing. To achieve this goal, it plans actions that include competitive costs throughout the production chain, as well as talent and local manager development.

## Querétaro

Querétaro has the potential to specialize in turbine design, manufacturing, assembly and Maintenance, Repair and Overhaul (MRO) of complex fuselage parts, turbines and landing gears.

As an important coordination mechanism between the industry and higher education and research institutes, the Aerospace Research and Innovation Network of Querétaro (RIIAQ) helps develop and strengthen research, technological development and innovation capabilities.

To exemplify the capabilities of other aerospace-driven regions (Nuevo León, Tamaulipas, Jalisco, Coahuila and San Luis Potosí), the following supply coordination scheme is presented.

## Competitiveness

Mexico has forged its vocation as a centre for high strategic value manufacturing, engineering and development, due to the degree of technological sophistication of its exports, its engineering talent (with the highest number of graduates in the Americas), the quality and competitiveness of its workforce and, particularly, its respect for industrial property.

Mexico is among the most competitive countries for manufacturing and supplying the US. According to KPMG, in 2012 Mexico had an average cost advantage of 21% (over 19 industries), compared to the US. The aerospace industry is one of the sectors in which Mexico highlights. The consulting firm of Alix Partners placed Mexico, for the third year in a row, as the country with the most competitive total manufacturing costs in order to address the North American market. We are also the most competitive country in terms of costs and taxes, according to Global Benchmark Report.<sup>5</sup>

Graph 4. Cost Index for manufacturing aerospace components



- Mexico is the **6th largest** supplier of aeronautical products to the US.<sup>6</sup>
- Mexico has the **4th largest** private jet fleet in the world.<sup>7</sup>
- Opening a business in Mexico takes only 9 days and 6 procedures.<sup>8</sup>

In the last decade, the average annual growth rate of engineering graduates in Mexico was 7%, placing it above the population growth rate.<sup>9</sup> More than 110,000 engineers graduate every year from science and technology programs in Mexico.<sup>10</sup>

## Message to Investors

An important window of opportunity for Mexico comes from developed countries' current economic situation. Today, the US lacks enough human capital, which means Mexico can be a strategic partner for the A+D industry. Even more, important budget cuts held in the US, have pushed several companies in this industry (especially those that obtain contracts from the US Government) to look for more competitive options such as those offered by Mexico.

These factors have created highly competitive poles that operate in a certified and world-class ecosystem. The Bilateral Aviation Safety Agreement (BASA) with the US is a clear example. It enables companies located in national territory to validate certifications granted by the Directorate of Civil Aviation (DGAC) with those granted by the Federal Aviation Administration (FAA), with the goal of introducing goods and designs to the US market.

Mexico's strategic geographic location and competitive and comparative advantages have made it the ideal location to produce dual-use goods and restricted technologies, that is, products and services that can be used in both civil and military applications. Due to this potential, a regulatory framework now exists which ensures the responsible use and final destination of sensitive goods produced in Mexico.

The Mexican Government has developed an export control system that has allowed Mexico to enter a group of countries which prevent the proliferation of weapons of mass destruction, but support high-tech civil and military projects. This Mexican export control system was evaluated by countries that are members of the Wassenaar Arrangement (WA). Mexico was accepted in record time (2012), since no new country had been admitted for more than five years.

Mexico's adherence to the WA ratifies the international community's trust in the country, as it consolidates as a reliable destination for the integration of sensitive technologies. It also shows the commitment to remain a safe destination for the production of goods and services which include both restricted technologies and dual-use goods and services. According to conservative estimates, Mexico's export industry will gain access to a potential market of 11.3 billion dollars annually, in addition to the potential to create 30,000 to 40,000 highly-paid jobs.<sup>11</sup>

# Successful Business Stories

## Bombardier

In October 2011, Bombardier announced a new investment of 50 million dollars for a new building where the aft fuselage of the whole family of Global aircraft will be manufactured, including the recently announced Global 7000 jet (entry-into-service scheduled for 2016) and Global 8000 jet (entry-into-service scheduled for 2017).

Since Bombardier established in Mexico in 2006, the company has invested a total of 500 million dollars in its manufacturing plant in Querétaro. This was the first time in Bombardier's history that a world-class facility was built from a green field.

## Eurocopter

In 2011, this company announced an important investment of 75 million dollars in Querétaro, which is leading to the creation of 80 highly-technical jobs for the manufacture of helicopter parts and aircraft parts for Airbus. The company seeks to meet several market conditions in order to develop its business plans in Mexico.

## Safran Group

Safran is a leading high-technology group, operating worldwide, with three core businesses: Aerospace (propulsion and equipment), Defence and Security. The Safran Group comprises a number of companies with prestigious brand names, and holds, on its own or in partnership, global or European leadership positions in all of its markets.

In Mexico, Safran group owns Labinal, Messier Services Americas, Messier-Dowty, Snecma, Snecma America Engine Services (SAMES), Morpho Identification, Morpho Cards, Turbomeca and Globe Motors. Safran employs over 4,000 workers in Mexico –twice as many as his closest competitor– which makes it the number one employer in Mexico's aerospace sector. Safran has been implementing its business plan in Mexico for almost 30 years.

Safran is also the top French investor in the country in the past few years. Since 2007, the Group has made eight openings of new manufacturing facilities or extensions. In March 2012, Safran opened a new Snecma's workshop for CFM56 engines in Querétaro. It is the most advanced of its category, using state-of-the-art technologies.

Over the past two years, sales of products manufactured by Safran in Mexico –which are mostly exported to the US– have grown at an average annual rate of 25%. As for new jobs, the company experienced a similar growth rate and is forecast to keep up the pace throughout the year.

<sup>1</sup>The sector comprises companies that focus on manufacturing, maintenance, repair, fitting, engineering, design and auxiliary services to commercial and military aircraft.

<sup>2</sup>Ibid.

<sup>3</sup>Sonora's Aerospace Industry Road Map, 2011.

<sup>4</sup>Competitive Alternatives 2012, KPMG; Global Benchmark Report 2011, of the Danish Industry Confederation; Manufacturing Outsourcing Cost Index 2010, Alix Partners.

<sup>5</sup>US Department of Commerce; US Census Bureau, 2013.

<sup>6</sup>Aviation Week, 2013.

<sup>7</sup>Ministry of Economy (SE), 2011.

<sup>8</sup>1.4% annual average between 2000 and 2010, National Institute of Statistics and Geography (INEGI).

<sup>9</sup>Statistical Yearbook 2011-2012, ANUIES, Mexico.

<sup>10</sup>SE, General Directorate of Foreign Trade (DGCE), 2011.