



# PURE AEROSPACE

See why the state that revolutionized the automotive industry has taken to the skies to become one of the top places in the country for aerospace business.

## MICHIGAN MEANS SUCCESS

From proven manufacturing resources and capabilities to educational opportunities and concentration of engineering talent, Michigan offers everything you need to make your aerospace business soar. Because of these dynamic resources, Michigan is home to more than 600 aerospace-related companies<sup>1</sup> and ranks in the top 10 as the most attractive state for aerospace manufacturing.<sup>2</sup> The state's world-class talent and concentration of research-driven technological innovation is why companies like Boeing, Lockheed Martin, Pratt & Whitney and NASA look to Michigan to meet their aerospace needs.

## PROVEN MANUFACTURING ASSETS

Nine of the 10 largest U.S. aerospace/defense R&D firms have a presence in Michigan.<sup>3</sup> Why? Michigan's vast advanced manufacturing infrastructure offers resources that are also valuable to the aerospace industry including: logistics and supply chain expertise, skilled manufacturing supplier tiers, robust tool and die infrastructure, maintenance and repair operations. These assets improve upon aerospace manufacturing productivity, reliability, supply chain rationalization and cost reduction.

## INDUSTRY LEADERS

Michigan is home to more than 160 aerospace product and parts manufacturing companies<sup>4</sup> and is also a leader in materials R&D with two co-located lightweight materials institutes: Lightweight Innovations for Tomorrow (LIFT), dedicated to advancing lightweight materials manufacturing, education, and training; and the Institute for Advanced Composite Manufacturing Innovation (IACMI), focused on research and development critical to the growth of the industry. Carbon fiber companies have also found a home in Michigan.

## COMMITMENT TO EDUCATION AND TALENT

Michigan has the largest concentration of engineering talent in the nation, with close to 133,000<sup>5</sup> engineers statewide that meet the growing needs of the aerospace industry. Michigan also has a skilled trades workforce of more than 250,000<sup>6</sup> and history shows that the state's workforce can successfully apply automotive manufacturing skills to the aerospace industry. The abundance of world-class talent is reflected in the state's commitment to education. Michigan has 15 universities and technical with

<sup>1</sup> Michigan Economic Development Corporation

<sup>2</sup> PwC, "Aerospace manufacturing attractiveness rankings" September 2018

<sup>3</sup> strategyE, "The 2018 Global Innovation 1000 Study"

<sup>4</sup> DnB Hoovers

<sup>5</sup> Emsi, 2018.4, Class of Worker QCEW Employees, Non-QCEW Employees, Self-Employed

<sup>6</sup> Ibid



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dedicated curriculum for the aerospace and aviation industry, creating the next generation of aerospace talent.<sup>7</sup> In addition, the state also has many universities and colleges with nationally ranked engineering programs.

### DID YOU KNOW?

- Michigan ranks No. 1 in the U.S. for its growth of occupations in primary demand for the aerospace industry.<sup>8</sup>
- Michigan employs seven mechanical, industrial, and aerospace engineers per 1,000 residents, which represents a concentration four times higher than the national average.<sup>9</sup>
- Labor costs for the aerospace industry in Michigan are 28 percent lower than the national average.<sup>10</sup>
- University of Michigan is ranked No. 4 in the U.S. for its undergraduate aerospace engineering program, and No. 5 for its graduate program.<sup>11</sup>
- Western Michigan University's College of Aviation, with 1,000 undergraduate students, is one of the largest aviation programs in the nation.<sup>12</sup>
- Michigan State University is ranked No. 1 in logistics and supply chain management.<sup>13</sup>
- Kettering University's mechanical engineering program is ranked No. 5 in the nation.<sup>14</sup>

### STRONG B2B FOUNDATION

Michigan's aerospace ecosystem goes beyond manufacturing and talent. It includes a strong underlying support network of state-sponsored and public programs that concentrate on aerospace business-to-business connections, procurement and capital. These include:

- **Pure Michigan Business Connect (PMBC):** PMBC matches aerospace-related companies with relevant industry purchasing representatives to help them grow revenue in new markets. [www.michiganbusiness.org/pmbc](http://www.michiganbusiness.org/pmbc)
- **Procurement Technical Assistance Centers (PTACs):** PTAC offices help Michigan companies successfully secure, perform and retain federal, state and local government defense contracts. [www.ptacsofmichigan.org](http://www.ptacsofmichigan.org)
- **Michigan Defense Center (MDC):** As part of the MEDC, the MDC is laser-focused on the support, protection and growth of Michigan's defense and homeland security industry and its missions, as well as the needs of today's military and the future of defense. [www.arsenalofinnovation.com](http://www.arsenalofinnovation.com)
- **Automation Alley:** A nonprofit manufacturing and technology business association and business accelerator that offers talent and business development programs and services, as well as industry trips, in the aerospace sector. [www.automationalley.com](http://www.automationalley.com)

To find out how your aerospace business can become part of Michigan's success story, visit [www.michiganbusiness.org](http://www.michiganbusiness.org).

Dedicated to shared economic success, the MEDC promotes the state's assets and opportunities that support business investment and community vitality. The MEDC's business assistance programs and services connect companies with people, resources, partners, and access to capital.



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<sup>7</sup>Emsi, 2018.4

<sup>8</sup>Emsi, 2018.4, Class of Worker QCEW Employees, Non-QCEW Employees, Self-Employed

<sup>9</sup>Ibid

<sup>10</sup>U.S. News & World Report

<sup>11</sup>Western Michigan University College of Aviation

<sup>12</sup>SCM Talent Group, World University Top 10

<sup>13</sup>U.S. News & World Report

<sup>14</sup>Emsi, 2018.4, Class of Worker QCEW Employees