

2020 **FACTS & FIGURES**

U.S. AEROSPACE & DEFENSE



AIA
AEROSPACE
INDUSTRIES
ASSOCIATION

EXECUTIVE SUMMARY

Since its establishment over a century ago, the Aerospace Industries Association (AIA) has served as the premier advocate and convener of choice for America's aerospace and defense (A&D) industry. From the trials of world wars to the pressures of the Space Race, our industry has met countless challenges head on and persevered.

In 2020, we are once again facing an unprecedented challenge: the COVID-19 pandemic. Global air traffic has dramatically decreased as the world fights this deadly virus. Civil aerospace, which accounts for 61% of our industry, has been particularly hard hit, with the impact likely felt for years to come. However, our industry is ready to overcome this newest hurdle, building on the success we saw in 2019.

Looking back on the world before COVID-19, the A&D industry maintained its decade-long growth trend. With increases in nearly every metric and an economic footprint that represented 1.8% of total U.S. Gross Domestic Product (GDP), 2019 could be considered one of the best on record for our industry. Our workforce, the cornerstone on which our industry's success has been built, grew by 4.8% and boasted average wages and benefits 46% higher than the national average. These high wages were supported by a 6.8% increase in industry sales revenue, which formed a combined contribution of \$63.6 billion to federal, state, and local tax coffers. These figures, once again, underscore our industry's vital role in the American economy.

As we have for more than a century, AIA is proud to continue its publication of this report, which has traditionally served as a year-in-review for industry statistics. However, this year's installment, "2020 Facts & Figures: U.S. Aerospace & Defense," not only provides a snapshot of our industry as it stood at the end of 2019, but also considers the impact of the pandemic on our industry in the first half of 2020.

In the coming years, the COVID-19 crisis will create unprecedented challenges for our industry and country. But just as we have throughout our history, we stand ready to overcome this crisis with the same ingenuity and determination that has defended this nation for decades and helped humans to not only touch the skies, but surpass them.

EDITOR'S NOTE

An important note for this year's edition is a change in the statistical methodology used in our economic impact modelling. This change, which primarily affected figures relating to our supply chain, has resulted in a significant comparative difference to statistics reported in our 2019 edition. All references to previous year's statistics, such as year-over-year growth, use statistics developed under this new methodology.

2019 HIGHLIGHTED STATISTICS



2.19M
WORKERS



\$909B
IN TOTAL INDUSTRY
SALES REVENUE



\$148B
IN EXPORTS



\$102,900
AVERAGE A&D INDUSTRY
WAGE AND BENEFITS



Photo Credit: Lockheed Martin

EMPLOYMENT

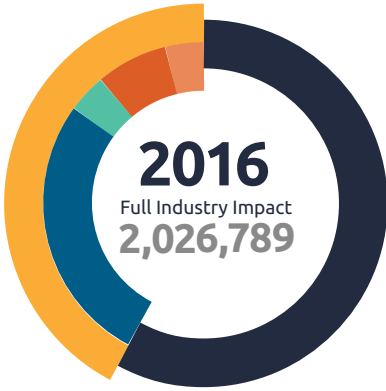
The aerospace and defense workforce continues to be the bedrock of our industry's success. At nearly 2.2 million strong in 2019, A&D workers represented 1.4% of America's total workforce. This was a nearly five percent increase in the total industry workforce from 2018. Around 58% of industry employment was attributed to the supply chain. Of end-use A&D companies, commercial aerospace held the largest share of employees (49% of that total).

Reflecting the highly skilled jobs they hold, our workers continued to receive wages and benefits far higher than the national average, with the average A&D worker receiving around \$102,900 in wages and benefits. This was 46% higher than the comparable national average for

all workers. Collectively, the industry paid out more than \$226 billion in wages and benefits in 2019, a 6.8% increase over the previous year.

The impact of commercial and government sales on our workforce cannot be understated. Four jobs are created for every million dollars in direct sales revenue generated by the industry. These jobs not only provide higher than average compensation, but also support their local communities. In 2019, the A&D industry contributed to \$17.6 billion in state and local tax revenues and \$46 billion in federal tax revenue.

A&D INDUSTRY EMPLOYMENT



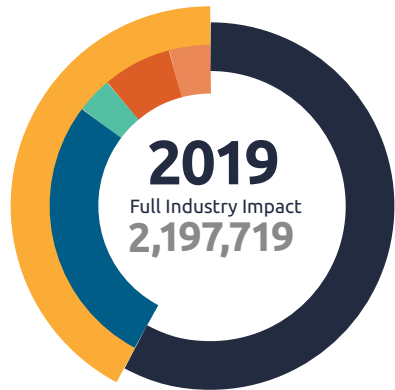
- Supply Chain ● 1,175,207
- End-Use ● 851,582
- Aeronautics/Aircraft ● 553,183
- Space ● 76,260
- Land & Sea Systems ● 144,005
- Cyber ● 78,134



- Supply Chain ● 1,173,191
- End-Use ● 851,488
- Aeronautics/Aircraft ● 551,547
- Space ● 75,333
- Land & Sea Systems ● 144,117
- Cyber ● 80,490



- Supply Chain ● 1,216,153
- End-Use ● 880,662
- Aeronautics/Aircraft ● 573,180
- Space ● 76,398
- Land & Sea Systems ● 147,951
- Cyber ● 83,133



- Supply Chain ● 1,275,100
- End-Use ● 922,619
- Aeronautics/Aircraft ● 602,072
- Space ● 81,704
- Land & Sea Systems ● 152,893
- Cyber ● 85,948

INDUSTRY OUTPUT

As 2019 drew to a close, the A&D industry posted strong annual growth with combined industry sales revenue amounting to \$909 billion, – a 6.7% increase from 2018 industry output. Of these sales, \$399 billion was attributed to our extensive, shared supply chain that supports both our aerospace and defense sectors. The companies making up our industry's supply chain provide vital products for end use manufacturers, such as bolts, wiring, hoses, and electronics. The total industry sales revenue left a significant footprint on the American economy, contributing to a combined economic value of \$396 billion that represented 1.8% of total U.S. GDP.

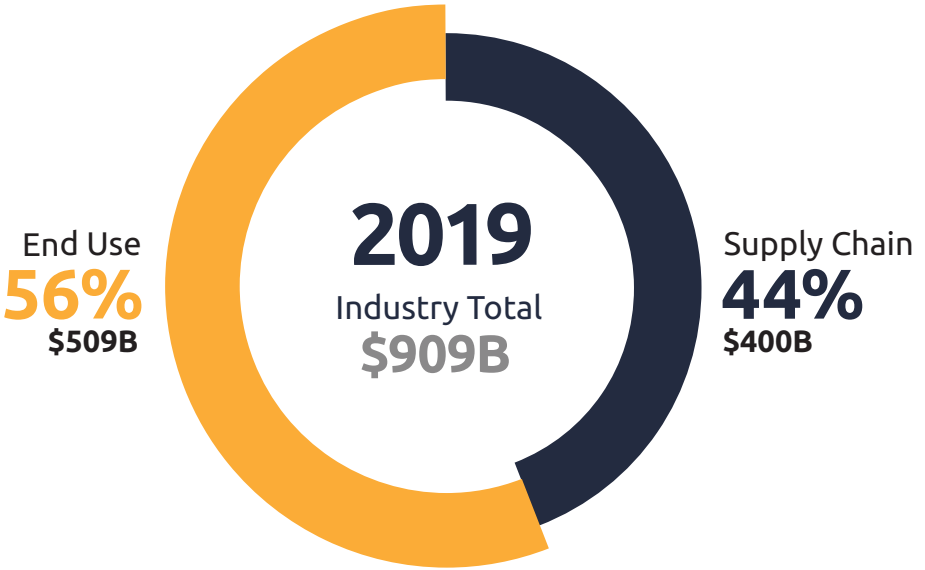
Space systems led industry growth, with a nearly 9% surge in sales from 2018. With the announcement of NASA's Artemis program and the founding of the U.S. Space Force in 2019, the space subsector appears well-positioned for future growth as our nation embraces its next frontier. Despite difficult circumstances in commercial aviation during the year, commercial aerospace managed to post strong gains, boasting a 7% growth in sales and a 6.9% growth in its contribution to U.S. GDP.



Photo Credit: Spirit AeroSystems

2019 A&D INDUSTRY OUTPUT

Value in Billions



- Supply Chain ● \$400B
- Aeronautics/Aircraft ● \$387B
- Space ● \$42B
- Land & Sea Systems ● \$61B
- Cyber ● \$19B



Photo Credit: Rufus-Royce

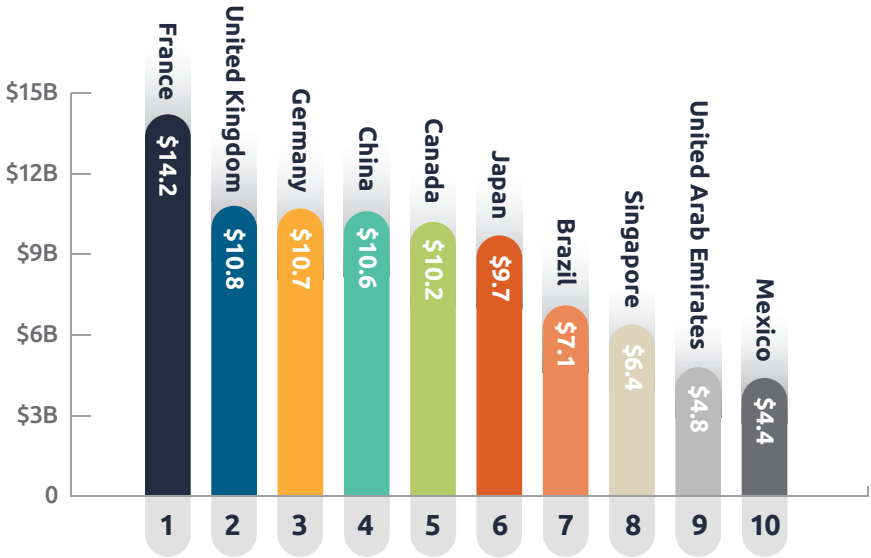
TRADE

The impact of turbulence in the U.S. civil aviation market was most evident in the nation's A&D industry export and import values. U.S. civil aerospace exports in 2019 were valued at \$126.5 billion, a 4% decline from the previous year. Meanwhile, defense exports increased by 10.5% to a three-year high of \$21.6 billion. This growth softened the 2% decline in total A&D exports. When combined with a 12% growth in A&D imports, the industry's trade balance decreased to \$79 billion in 2019, representing the fifth highest annual A&D trade balance since 2010.

In 2019, France emerged as the nation's top A&D export destination, importing \$14.2 billion in American A&D products in 2019. This was slightly higher than France's A&D imports in the prior year, with a modest increase of around \$100 million. France also continued to be the top country of origin for America's A&D imports, as the value of its cumulative A&D exports to the United States surged by 31% to a ten-year high of \$16.9 billion. This was largely fueled by a nearly \$2.7 billion increase in turbojet engine-related imports from French manufacturers, as well as a \$673 million increase in imports of large civil aircraft. Imports from Canada and the United Kingdom also grew, with those countries becoming the second and third biggest exporters of A&D products to the United States respectively.

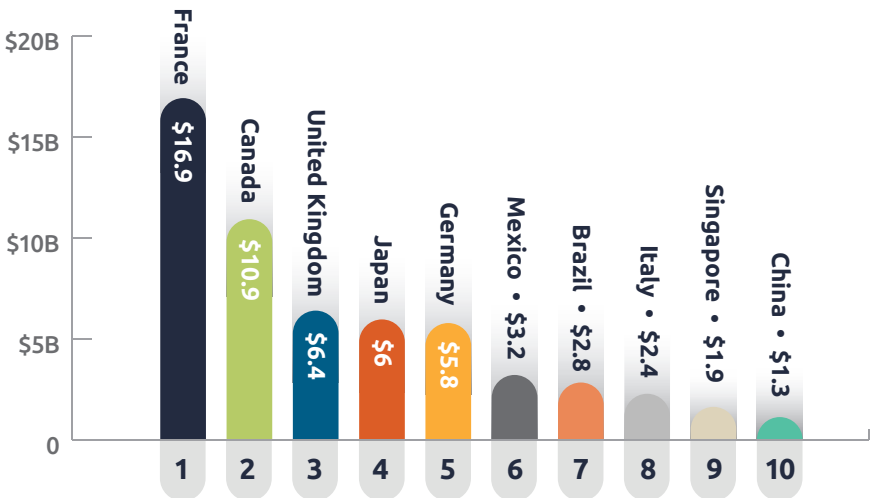
TOP EXPORT DESTINATIONS

Value in Billions



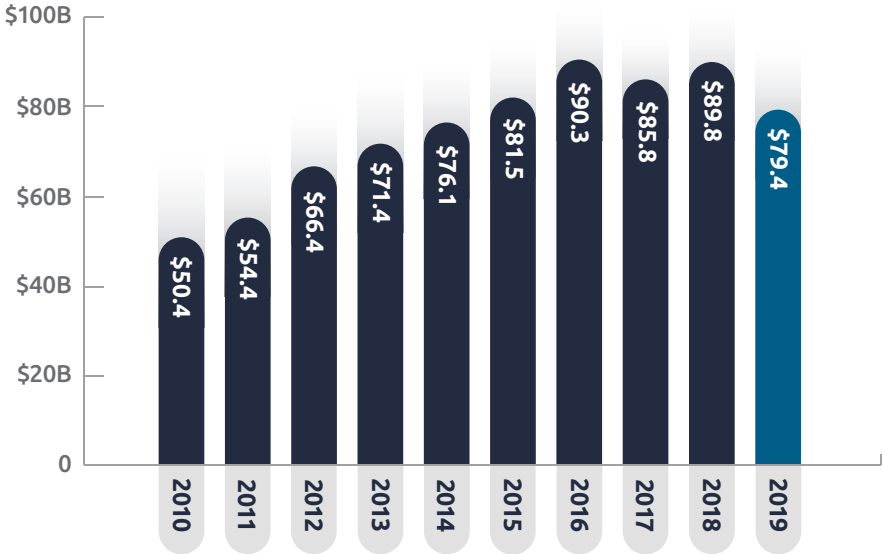
TOP IMPORT ORIGINS

Value in Billions



TOTAL A&D TRADE BALANCE

Value in Billions





David Bohrer, National Association of Manufacturers - Click Bond Inc.

Defense
14.6%
\$21.6B

**Industry
Exports**
Total \$148.1B

Commercial
85.4%
\$126.5B



Photo Credit: Huntington Ingalls Industries, Inc.

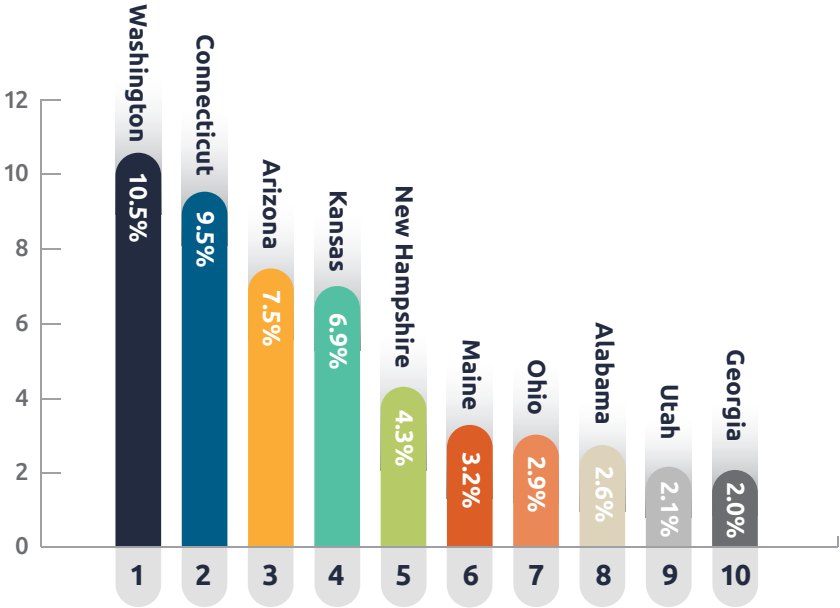
TOP STATES FOR A&D

The A&D industry saw business growth in 49 states and the District of Columbia in 2019. The only outlier was Maryland, whose statewide sales shrank by roughly 0.3%. The states that saw the biggest relative A&D sales growth to the prior year were Wyoming (21%), Vermont (15%), South Carolina (12%), Missouri (11%), and Nevada (11%). The State of Washington remained the national hub of the A&D industry, accounting for 15% of all U.S. A&D industry sales with \$137 billion in statewide revenue. It was followed closely by California at \$119 billion in A&D revenue, with Texas, Connecticut, and Arizona trailing not far behind.

The impact of defense spending on state economies cannot be overstated. According to Department of Defense 2018 statistics, which are the most current available, more than \$358 billion in contract payments were made across all fifty states and the District of Columbia in FY2018. The top states to receive defense spending closely mirrored the top states for A&D sales, with California, Texas, and Virginia at the top of the list. Virginia felt the strongest impact from defense spending, with defense contract payments contributing to 7.2% of state GDP in 2018.

A detailed breakdown of A&D industry statistics for each state and the District of Columbia can be found on the web at www.aia-aerospace.org.

TOP 10 STATES BY PERCENT A&D CONTRIBUTION TO GDP



TOP 10 STATES BY A&D EMPLOYMENT

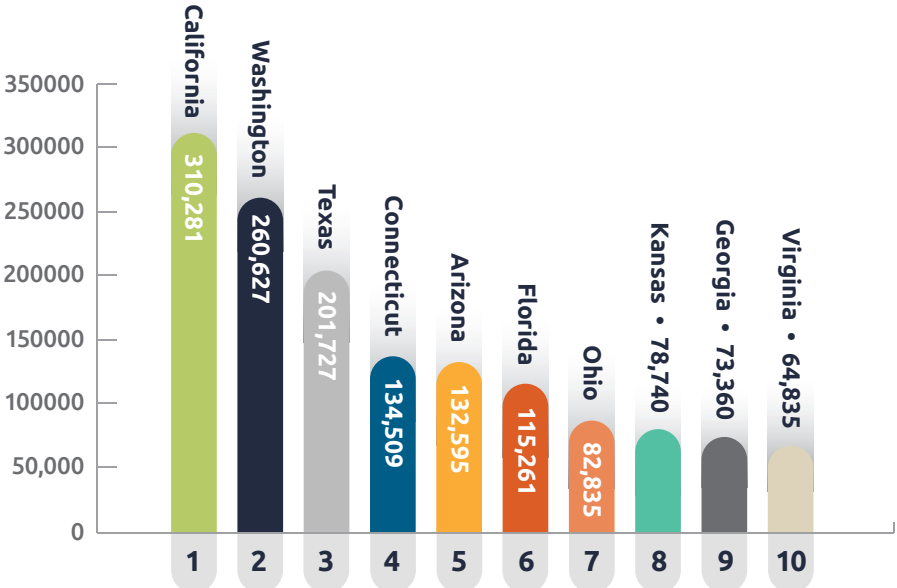




Photo Credit: Ball Aerospace

THE INITIAL IMPACTS OF COVID-19

Last year, the A&D industry saw some of its highest industry employment and sales revenue in the past half century. However, the unprecedented crisis brought by COVID-19 during 2020 continues to have a clear and significant impact on our workforce, industry, country, and global economy.

The first half of 2020 saw one of the most dramatic changes experienced by the civil aviation industry in its century-long history. Between February and April of 2020, domestic air travel in the United States slowed to a crawl, with more than a 95% year-over-year decrease in revenue passenger miles at its lowest point in mid-April. Globally, the equally immense decline in passenger mileage due to the pandemic is expected to result in more than \$400 billion in revenue loss for airlines. Civil aviation manufacturers will in turn be affected, with some forecasts estimating that international aircraft production will drop by nearly 50% in 2020. The impact on the U.S. civil aviation workforce is expected to be equally severe without further government assistance, with more than 220,000 U.S. jobs potentially lost under current projections. Though air passenger demand may return to 2019 levels within the next five years, the aviation market may take nearly a decade to recover.

As end-use civil aviation manufacturers face decreasing passenger demand, the industry's shared supply chain will also see substantial impacts. In addition to a reduction in airframe production and its associated supply-chain components, the significant reduction in passenger mileage may result in an excess of aftermarket parts. These factors will pose a serious barrier to the recovery of the industry's supply chain.

Both the civil and defense sectors depend on the same shared supply chain, and as a result, the defense industry is unlikely to be spared as its' suppliers face disruptions in their civil manufacturing consumer base. In addition to further supply-chain disruptions, the defense sector will likely be challenged by fiscal pressures from reduced tax receipts during the recession, heightened competition among federal priorities, and growing concern about deficit spending.

The full scope of the pandemic's impact remains a matter of great concern, especially when it comes to our top priority: our workers. A&D companies have taken a number of steps to help their workers during this time, including improving benefits for workers and their families, ramping up the frequency of decontamination efforts, implementing physical distancing procedures, providing personal protective equipment (PPE), and conducting temperature testing at facilities. Companies recognize these as needed actions to protect the health and economic wellness of workers, but this new normal certainly creates a new financial burden on businesses, impacting health and viability.

As companies take steps to protect our workforce and help our industry manage the crisis, government support can also play a role. Increased contract progress payments for defense companies, as well as both relief and support measures in the Coronavirus Aid, Relief, and Economic Security (CARES) Act, are among the critical government actions taken thus far. We've also seen agencies amend progress payments and designate our industry as essential, providing the cash flow and stability businesses rely on. And overall, this crisis has been a reminder of how critical flexibility in contracting and clear and consistent guidelines from the government customers are for our businesses.



Going forward, additional government action will be necessary and could take many forms, including a promising bipartisan private-public investment proposal focused on keeping workers on payroll, the possible purchase of excess spare parts, and potential financial support for purchasers of commercial aircraft.

Our leaders must also support sustained and stable investment in defense to ensure America's national security and maintain the health of the defense industrial base. Some experts argue that threats to our security are multiplying, as adversaries take advantage of the crisis. By sustaining investment in defense, leaders are supporting our national security, a healthy defense industrial base, and continued progress in the modernization and readiness our troops need to meet new threats.

There are also a variety of potential steps that can be taken to support the entire aerospace and defense industry, including:

- Sustained investment in research and development (R&D), which would fuel the innovation that is the foundation of A&D and help the industry meet the growing demands of the Great Power Competition; and
- Ensuring a robust talent pipeline in STEM and critical trades, building the 21st century workforce that will be crucial to turning innovative research into reality.

The impact of this pandemic and the solutions needed to overcome it evolve every day. But just as we have done for more than 100 years, the A&D industry is ready to work with our country's leaders to meet this challenge and set our nation on the road to recovery.





METHODOLOGY

This report is based on data developed in partnership with IHS Markit and independently by AIA. Data pertaining to the industry's employment, output, wage, and value-added figures are based on data from the U.S. Census Bureau, the Department of Labor, IMPLAN, and proprietary data from IHS Markit. Data on the industry's foreign trade activity are based on an analysis of trade data from the U.S. International Trade Commission and the United Nations' International Trade Statistics Database. Data on defense contract spending is derived from the Department of Defense's Office of Economic Adjustment. COVID-19 impact data was derived from the results of independent analysis produced in partnership with Avascent, The Boston Consulting Group, and McKinsey & Company.

AIA defines the U.S. A&D industry as consisting of establishments that manufacture end-use platforms, including civil and military aircraft, rotorcraft, space systems, military vehicles and land systems, naval ships, missiles, and armaments, as well those establishments that constitute the industry's manufacturing and services supply chain.





Photo Credit: Boeing/NASA/Johnson Space Center

ABOUT AIA

AIA is the premier trade association representing more than 300 of the nation's leading A&D manufacturers and suppliers. For over 100 years, AIA has been the industry voice shaping the policies that matter most to our members. AIA's expertise represents the interests of manufacturers and suppliers of civil, military, and business aircraft, helicopters, unmanned aerial systems, space systems, aircraft engines, missiles, materiel, and related components, equipment, services, and information technology.



Photo Credit: Northrop Grumman



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