AVIATION & AEROSPACE WORKFORCE OUTLOOK

Over the next 20 years, the global aviation and aerospace industry will require approximately 2.4 million new personnel, including 660,000 pilots.
Source: Boeing Investors

COMMERCIAL DRONE INDUSTRY GROWTH

- The number of FAA-certified commercial drone pilots in the United States has grown rapidly.
  - **Seven years ago**: 0 commercial drone pilots
  - **Today**: 427,598 certified drone pilots
  - **Projected in 2 years**: 500,000+
  - **Projected in 7 years**: 1 million+
  Source: Federal Aviation Administration
- By 2030, there will be more commercial drone pilots than all crewed pilots combined in the U.S.
  Source: Federal Aviation Administration
- The drone industry is expanding into multiple sectors, including agriculture, building inspection, construction, first responders, oil & gas, and healthcare.
  Source: Flying Magazine
- Aerium aims to train 1,000–2,000 new commercial drone pilots by summer 2026 through micro-certification programs in career tech centers and high schools across Pennsylvania.

PILOT AND TECHNICIAN DEMAND

- Over the next 20 years, the global aviation and aerospace industry will require approximately 2.4 million new personnel, including 660,000 pilots.
- North America alone will need approximately 119,000 new pilots in the next two decades.
- The industry will also require 710,000 new technicians and 1,000,000 new cabin crew members globally.
  Source: Boeing 2025 Pilot & Technician Outlook

AIR TRAFFIC CONTROLLER SHORTAGE

- The U.S. continues to face a critical shortage of air traffic controllers. As of August 2025, towers and approach/departure facilities were between 3000 and 3500 controllers short of their staffing goal.
  Source: Flying Magazine
- A 2026 GAO report confirms controller numbers declined ~6% over the past decade while air traffic rose 10%. Only 23 of 313 FAA facilities meet their staffing goals.
  Source: GAO / Axios, Jan 2026
- The FAA hit its FY2025 hiring target (2,026 new controllers) and plans to hire 8,900 by 2028, including 2,200 in FY2026.
  Source: FAA / CBS News, 2025

MILITARY READINESS CHALLENGES

- The U.S. Air Force currently faces a shortage of 1850 pilots, with this gap expected to grow.
  Source: Air Force Times
- A variety of factors have contributed to the Air Force having the smallest combat aircraft inventory in its history—with bombers averaging nearly 50 years old and fighters about 30. Aging equipment requires more maintenance, not less. But the maintenance workforce is shrinking at exactly the moment the demand for skilled technicians is rising most sharply.
  Source: Air & Space Forces Magazine

ADVANCED AIR MOBILITY & EMERGING TECH

- The industry is seeing increased demand for aviation maintenance technicians, particularly those skilled in drone technology and advanced air mobility (AAM) vehicles.
  Source: National Business Aviation Association
- The need for pilots and technicians capable of operating AAM vehicles is growing, with projects like the BETA drone, a 10,000-pound, four-passenger aircraft designed for medical transport and logistics.
  Source: McKinsey & Company
- There is rising demand for professionals skilled in composite materials, next-generation propulsion systems, AI, 3D printing, VR/AR, and other aerospace innovations — with AI, automation, and digital fluency now identified as the top workforce priorities in the industry.
  Source: McKinsey Aerospace/Defense Workforce Study
- Pennsylvania is investing in aviation and aerospace infrastructure, including vertiport development and emergency medical supply delivery via drones.
  Source: WPXI TV

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AVIATION AND AEROSPACE CAREER PATHWAYS

- The vast majority of all aviation and aerospace jobs are non-pilot positions.
  Source: Aviation Pros
- The vast majority of jobs in the industry do not require a four-year degree.
  Source: Federal Aviation Administration
- Aircraft maintenance technicians can start at $70,000–$85,000 per year, with potential earnings of $110,000–$115,000 by age 25— without requiring a college degree.
  Source: US Aviation Academy
- Completing an 18–24-month training program for aircraft mechanics can lead to starting salaries of $65,000–$85,000, with many reaching six-figure salaries within three years.
  Source: US Aviation Academy
- The cost to obtain a commercial pilot license is approximately $100,000–$120,000, creating a significant barrier to entry.
  Source: ATP Fight Schools
- As of May 2023, the median annual wage for air traffic controllers was $137,380.
  Source: US Bureau of Labor Statistics

WORKFORCE & ECONOMIC IMPACT

Drones are a cross-cutting technology with applications across nearly every industry—from agriculture and construction to public safety and logistics—driving efficiency, safety, and better decision-making. Their versatility continues to expand, making them relevant to virtually every industry cluster.
Source: National Business Aviation Association

While specific statistics detailing drone usage by career cluster are limited, available information highlights significant adoption in **several key areas:**

TRANSPORTATION, DISTRIBUTION & LOGISTICS

- Drones are being explored for delivering goods, surveying infrastructure, and managing logistics, indicating a growing interest in integrating unmanned systems into transportation networks.
  Source: AUVSI

AGRICULTURE

- The agricultural sector has increasingly integrated drones for tasks such as crop monitoring, irrigation management, and soil analysis. This integration is expected to grow, with the agricultural drone sector projected to expand at a compound annual growth rate (CAGR) of 22.94% from 2022 to 2028.
  Source: Dart Drones

VIDEO TECHNOLOGY & COMMUNICATIONS

- Drones have revolutionized aerial photography and videography, accounting for approximately 34% of the commercial drone market. This technology enables the capture of unique perspectives in film, advertising, and media production.
  Source: Dart Drones

CONSTRUCTION

- In the construction industry, drones are utilized for site surveying, monitoring progress, and inspecting structures, enhancing efficiency and safety. The National Center for Construction Education and Research (NCCER) offers certifications like the Core Curriculum and Carpentry, which are among the top credentials earned in this cluster.
  Source: NCCER

INFORMATION TECHNOLOGY

- The Information Technology cluster encompasses careers in drone software development, data analysis, and cybersecurity, supporting the growing demand for drone-related services and applications.
  Source: careertech.org

LAW, PUBLIC SAFETY, & SECURITY

- Public safety agencies employ drones for search and rescue operations, disaster response, and law enforcement activities, providing aerial perspectives that enhance situational awareness and decision-making.
  Source: AUVSI

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