



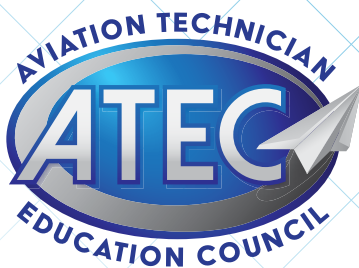
Pipeline Report

& AMTS DIRECTORY

2024



Pipeline Report & AMTS DIRECTORY



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ABOUT THE REPORT

This year's report was developed collaboratively by the Aviation Technician Education Council (ATEC) and Oliver Wyman, which combined their respective datasets to offer a more comprehensive view of the aviation technical pipeline. This partnership has led to enhancements in calculations and methodologies, resulting in certain modifications in trends and findings compared to our previous annual reports. We anticipate that this year's report and future editions will offer more comprehensive insights into the aviation technician landscape, enhancing our ability to inform collective workforce initiatives.

This report is a compilation of information about Federal Aviation Administration (FAA) airframe and powerplant (A&P) mechanic certificate holders, the aviation maintenance technician schools (AMTS, part 147 programs, or "A&P schools") that prepare the majority of such individuals for careers in aviation maintenance, and the companies that employ maintenance professionals. ATEC publishes the report annually as ***The Pipeline Report***.

ATEC is a partnership of aviation maintenance technician schools, organizations that support them, and employers that hire their graduates. The council is committed to advancing and bolstering technician education through its communication channels, advocacy initiatives, and networking events. To learn more, visit www.atec-amt.org.

Oliver Wyman—a business of Marsh McLennan (NYSE: MMC)—is a global leader in management consulting. With offices in more than 70 cities across 30 countries, Oliver Wyman combines deep industry knowledge with specialized expertise in strategy, operations, risk management, and organization transformation. VECTOR, a division of Oliver Wyman, supports certification and maintenance programs for aviation clients worldwide.

This year's edition covers the period since the last version was published in December 2023. Supporting data was collected through an ATEC-conducted survey of educational institutions holding an FAA certificate issued under Title 14 of the Code of Federal Regulations (CFR) part 147. The survey took place between June and July of 2024. Almost half of all AMTS certificated in 2023 responded to the questionnaire; contributing programs are recognized with an asterisk (*) in the list of AMTS starting on page 25.

Additional data was gathered from the National Center for Education Statistics, FAA Airmen Certification Branch personnel, the FAA maintenance school database, FAA US Civil Airmen Statistics, Regional FAA Active Airmen Tables, FAA data downloads, Aviation Week Network, the FAA airmen certification database, and Oliver Wyman's proprietary data. Information used in the report from these sources is based on data available as of June 17, 2024.

SAVE THE DATE

2025

**ATEC ANNUAL
CONFERENCE**

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MARCH 16-19, 2025

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EXECUTIVE SUMMARY

The aviation maintenance industry is experiencing a record return to growth post-pandemic, with a 32% jump in new mechanic certificates in 2023 compared to the prior year. The 200 AMTS produced two-thirds of all new mechanics last year. After several years of depressed growth due to the pandemic, AMTS saw a 31% increase in certificated mechanic graduates.

Although the mechanic workforce is growing, demand is expected to grow even faster, with the North American fleet projected to increase by about 20% over the next 10 years. In particular, a large wave of retirements will drive a 9% shortage in certificated mechanics to meet commercial aviation needs. This shortfall is projected to grow to nearly 20% by 2028. And still more mechanics will be needed to meet the needs of other aviation sectors, such as business aviation and urban air mobility.

Given the current pipeline development landscape, the key to boosting the number of aviation mechanics will be increasing AMTS enrollment, developing work-based certification pathway programs, and attracting more women, persons of color, and experienced military veterans to the industry.

AMTS have about 35% unfilled seat capacity currently; they cite program awareness and insufficient marketing as challenges to increasing enrollment. Effectively addressing this requires a concerted effort at the local community level and through broader initiatives aimed at enhancing awareness among specific target populations. An influx of federal funding approved by Congress in 2018 and distributed through the FAA's Aviation Workforce Development Grants has directed millions of dollars into aviation maintenance programs, an initiative that will continue with the most recent authorization of another \$60 million over the next three years. A&P schools and the industry are also building new pipelines from high schools, thanks to an initiative led by ATEC that aims to enroll 10,000 high school students into the aviation maintenance curriculum by 2027.

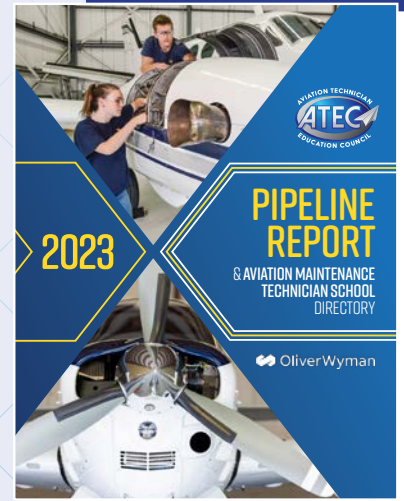
Women make up just 2.8% of the mechanic workforce, and this figure is growing by only tenths of a percentage point annually, indicating a large opportunity space. The percentage of military veterans transitioning to civilian maintenance jobs did grow by double digits for the third consecutive year, but this is a drop in the ocean, comparatively speaking: ATEC estimates that less than 10% of experienced veterans are transitioning to similar mechanic roles on the civilian side.

2023

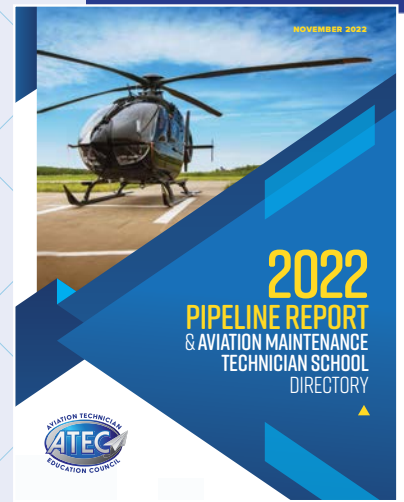
Another leading challenge for AMTS—which is likely to worsen along with the workforce shortage—is the availability of qualified instructors. This is becoming more acute as technical workforce demand increases. AMTS tend to be hit the hardest due to industry competition (and associated salaries) for the same talent. A new initiative is tackling the shortage by helping professionals transition to the classroom and schools retain new educators.

In addition, some 38% of AMTS report that a shortage of Designated Mechanic Examiners (DMEs) is hindering their ability to certify graduates. ATEC estimates that the DME population needs to increase by 30% just to accommodate the current flow of graduates—with even more needed to support future demand growth. Without prompt action, testing capacity will become a significant bottleneck. ATEC has long encouraged the FAA to expand examiner availability by incorporating DMEs into the Organization Designation Authorization (ODA) program as a solution to the growing shortage. The initiative may finally come to fruition next year.

On a brighter note, the rate of A&P students becoming certificated mechanics has increased for the first time since 2020. This year’s survey shows that 60% of AMTS graduates became certificated, up ten basis points from last year’s seven-year low. Schools are increasingly taking advantage of flexibilities available in the new part 147, with 80% of AMTS integrating FAA testing directly into their A&P training programs and alleviating the idea that testing is “elective.”



2022



2021



INDUSTRY BACKDROP

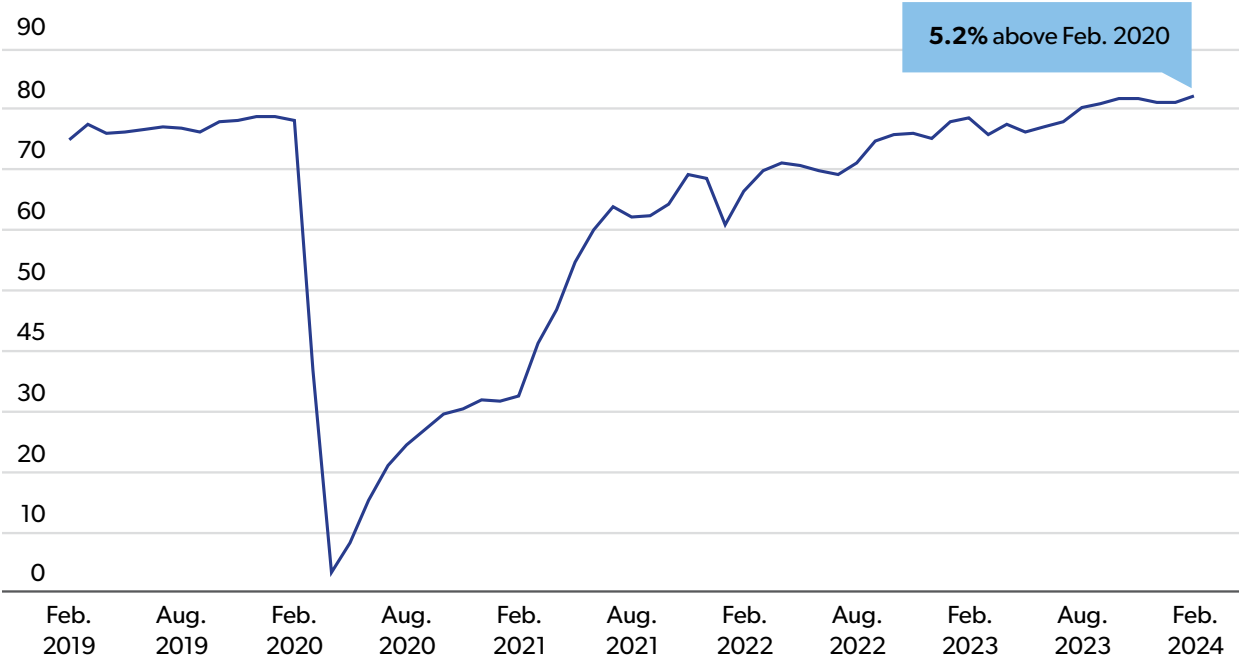
As shown in Figure 1, global air traffic has grown beyond pre-pandemic levels. The International Air Transport Association reported that US air traffic in February 2024 exceeded the February 2020 benchmark by 5.2% (as measured in revenue passenger-kilometers).

According to the US Bureau of Transportation Statistics, US passenger traffic (as measured in scheduled service passengers) in February 2024 was 8.6% higher than in February 2023 and 10.7% higher than in December 2019.

In addition, the North American aircraft fleet is at 102% and maintenance, repair, and overhaul (MRO) activity at 96% of 2019 levels, according to the **Oliver Wyman Global Fleet and MRO Forecast 2024-2034**. As 2023 ended, US airlines were operating 480 more mainline aircraft than they were at the end of 2019, and the North American fleet is projected to increase by about 20% over the next 10 years.

Figure 1
US Domestic and International Passenger Airline Traffic, 02/2019-02/2024

Thousands



Source: Bureau of Transportation Statistics

Airline maintenance workforces were thinned during the pandemic due to Baby Boomer and COVID-related early retirements, layoffs, and highly experienced personnel leaving for greener pastures. Oliver Wyman estimates a North American shortage of 16,200 aviation technical personnel including 10,800 certificated mechanics as of 2024.

Workforce pipelines are changing as well. For instance, many airlines that used to rely on hiring technicians from third-party shops and regional partners are now recruiting newly trained employees and, in some cases, paying for them to attend accredited schools.

These shifts are reshaping how maintenance providers attract talent and putting more pressure on workforce pipelines to produce more skilled workers.

THE WORKFORCE

MAINTENANCE PERSONNEL

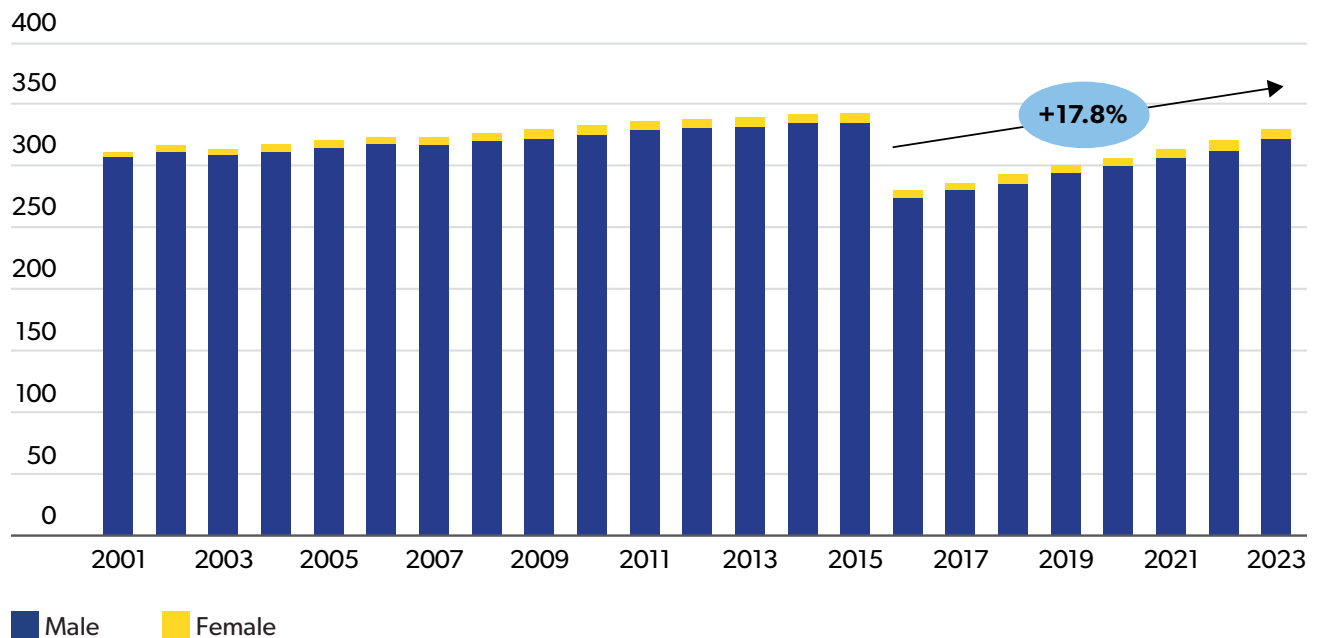
According to Oliver Wyman analysis, the US civil aviation maintenance workforce—including both certificated mechanics and noncertificated technicians—includes more than 328,000 personnel. This includes employees in parts manufacturing and distribution, in-house airline maintenance organizations, and those working in MRO for either part 145 repair stations or air carriers.

CERTIFICATED MECHANICS

The FAA airman certification database includes 329,156 certificated mechanics, a 2.3% increase over the previous year's population. Despite this growth, the number of mechanics has stayed relatively flat over the past two decades. Adjusting for the 2016 mandate—when the FAA required application for reissued plastic certificates—the population has grown by an average annual rate of 2.4% over the past 7 years and 18% in total over the past 8 years (Figure 2).

Given that the FAA database does not account for mechanic certificate holders who are not actively exercising the privileges of their certificate, the number of actively working mechanics is considerably lower than the total number of individuals possessing a certificate. This discrepancy is highlighted by the notable disparity between the FAA figures for certificated mechanics and Oliver Wyman's estimate of the total technical workforce population.

Figure 2
US Certified Mechanics, 2001-2023
Thousands



Note: The FAA does not monitor the employment status or active engagement of mechanic certificate holders. Certified mechanics are removed from the airman database only in specific circumstances: upon notification of their death, suspension or revocation of the certificate, or upon reaching 90 years of age. Consequently, the count of actively working mechanics is considerably lower than the total number of individuals possessing a certificate, as highlighted by the notable disparity between the FAA figures for certified mechanics and Oliver Wyman's estimate for the total technical workforce population.

Source: Federal Aviation Administration (FAA) Civil Airman Statistics

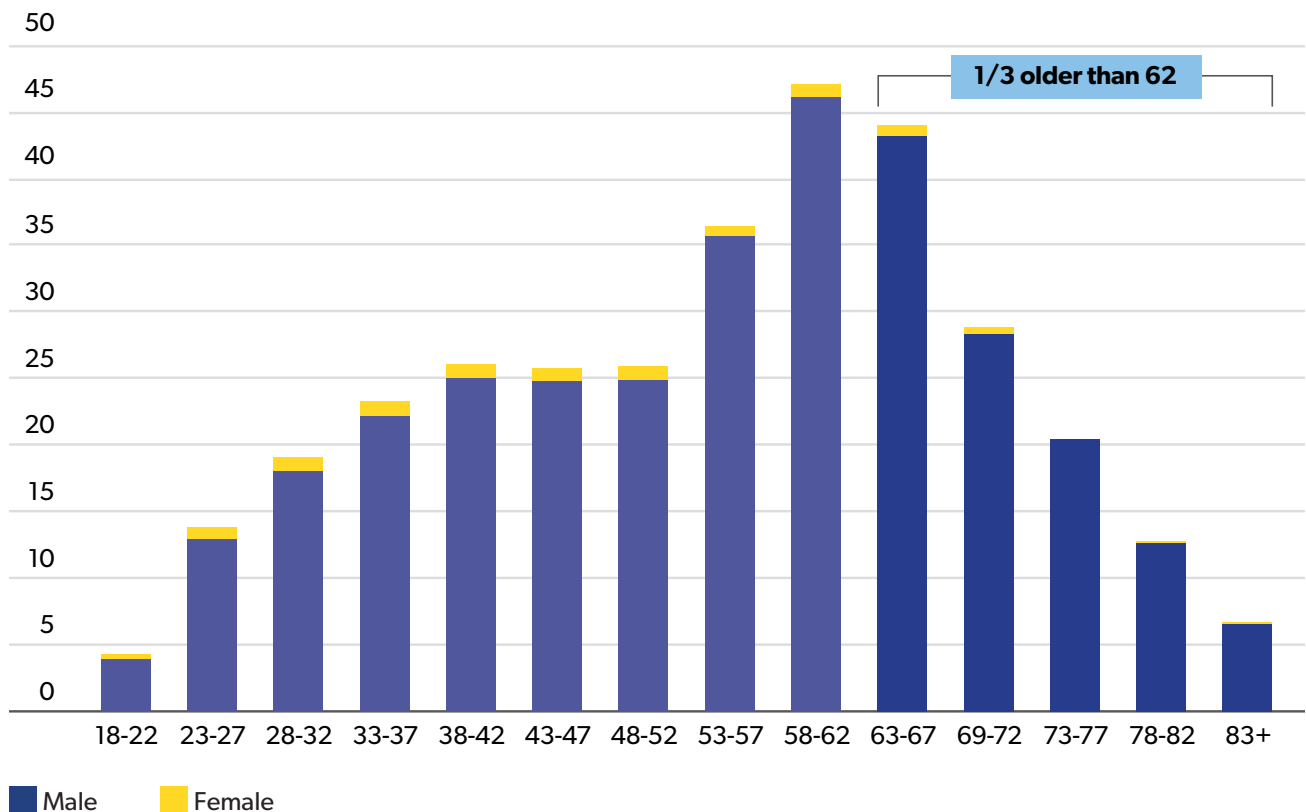
DEMOGRAPHICS

Women make up 2.8% of the certificated mechanic population, a number that is trending up by only tenths of a percent every year. A decade ago, women made up 2.2% of the mechanic population.

As shown in Figure 3, the aviation mechanic population continues to grow older: 40% are over 60. Over the next 10 years, more than 68,000 certificated mechanics, or one in three, will reach retirement age. The average FAA mechanic is 54, which is 12 years older than the average US worker, as reported by the US Bureau of Labor Statistics. Women comprise a younger demographic – the average age of female mechanics is only 46.

Figure 3
US Mechanic Age Distribution, 2023

Thousands



Source: Federal Aviation Administration (FAA)

SUPPLY

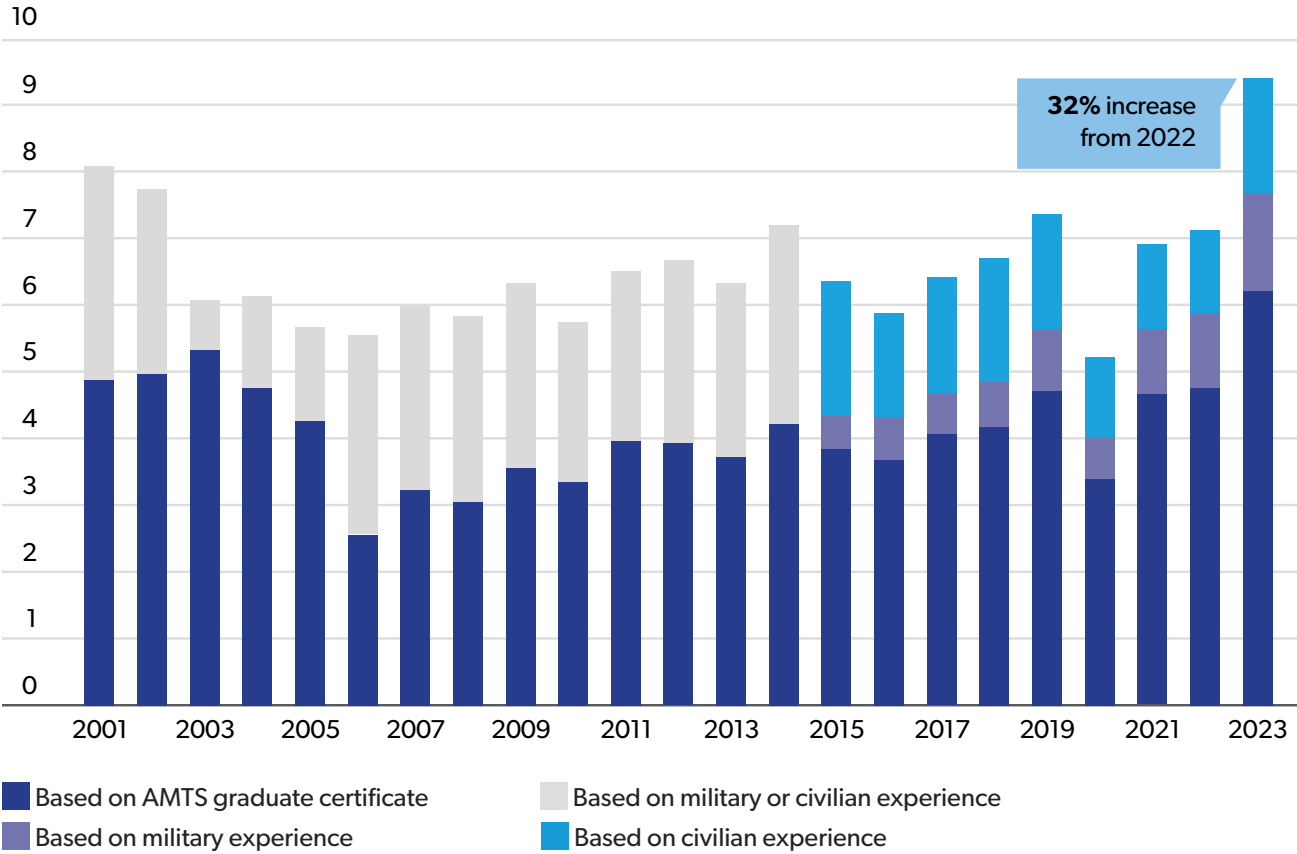
ATEC estimates that approximately 7,500 would-be mechanics did not follow through on certification in 2020-2022, but the most recent figures indicate a reversal of this trend. Last year, the FAA issued 9,401 new mechanic certificates, marking a 32% rise from the preceding year. This increase was significantly larger than that of 2022 (2.7%) and just 4% below pre-pandemic levels.

Two-thirds of new mechanics obtained certification through an A&P school. The remainder were certificated through military experience (16%) or work experience (18%) (Figure 4). All three pathways saw increases in certification rates, with those receiving certification on the basis of experience realizing a nearly 40% jump—evidence of increased access to employer-based certification pathways as the industry develops additional pipelines through apprenticeship and other on-the-job certification programs.

New AMTS graduate certifications increased by 31% last year, accounting for the majority of overall growth. AMTS saw a 5% increase in overall enrollment, a 10% increase in A&P school graduates, and the apparent reversal of deferrals, together with a steady rise in the number of A&P schools. But the main driver of supply growth has been increased rates of student certification: In 2023, schools reported that 60% of students obtained mechanic certification, up ten basis points from the previous year, and equivalent to 686 new mechanics.

The widespread adoption of progressive testing by A&P schools likely has contributed to this increase in certifications. Eighty percent of programs report that students take at least a portion of the FAA test after completing the corresponding portion of the curriculum—a practice that is becoming more widespread after changes to part 147 made it easier for schools to modernize program structure and curriculum.

Figure 4
US New Mechanic Certificates, 2001-2023
Thousands



Source: Federal Aviation Administration (FAA)

The percentage of women holding a mechanic certificate also increased. Nearly 7% of new AMTS-sourced certificated mechanics are women, compared to 4% of those sourced from military or civilian experience. Overall, women now make up 2.8% of the mechanic workforce, a figure that has nominally but steadily climbed year over year during the past decade.

The military pathway for new mechanic certification saw steady double-digit growth for the third consecutive year. Although this trend implies the industry is making strides in facilitating the

transition of veterans to the civilian sector, the 1,479 individuals who obtained FAA certification based on military experience represent only a fraction of the estimated 22,000¹ service members with aviation maintenance backgrounds exiting annually. ATEC estimates the civil aviation industry is capturing less than 10% of veterans with at least some aviation maintenance experience. To address this gap, a coalition including ATEC championed language in the FAA Reauthorization Act of 2024 that would direct the agency to promulgate a rule aimed at easing the military-to-civilian transition. This initiative will be a key focus for ATEC in the coming year.

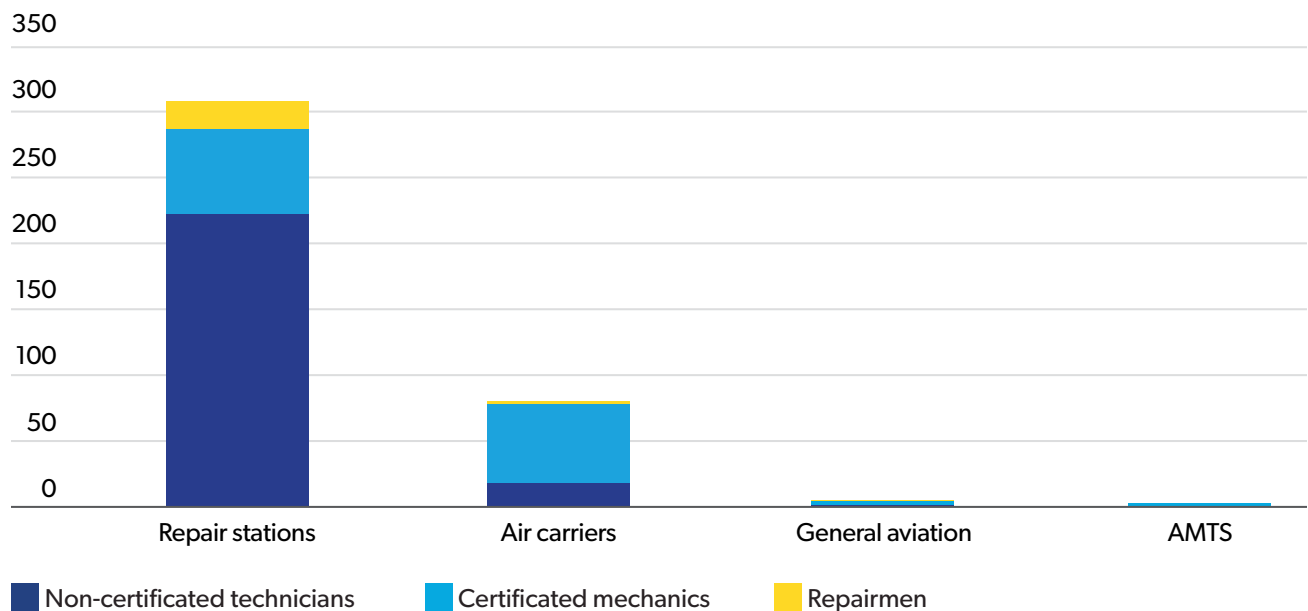
EMPLOYERS

In 2023, the FAA reported that 40% of certificated mechanics were engaged in general aviation, working for repair stations, air carriers, or AMTS.² There was a decrease of almost 8% in the number of mechanics employed by general aviation that year.

Certificated mechanics account for one third of all aviation technical personnel employed in these segments—including 76% of the air operator maintenance workforce, 21% of the repair station workforce, and 89% of the general aviation workforce. Repair stations employ about 78% of all technical personnel and half of all certificated mechanics (Figure 5).

One percent of certificated mechanics work in A&P schools. Despite a 5% increase in total student enrollment, the A&P instructor workforce remained flat in 2023 compared to the previous year, underscoring the growing gap between teacher supply and demand and the challenges programs face in hiring and retaining certificated instructors.

Figure 5
US Technical Personnel Aviation Employers, 2023
Thousands



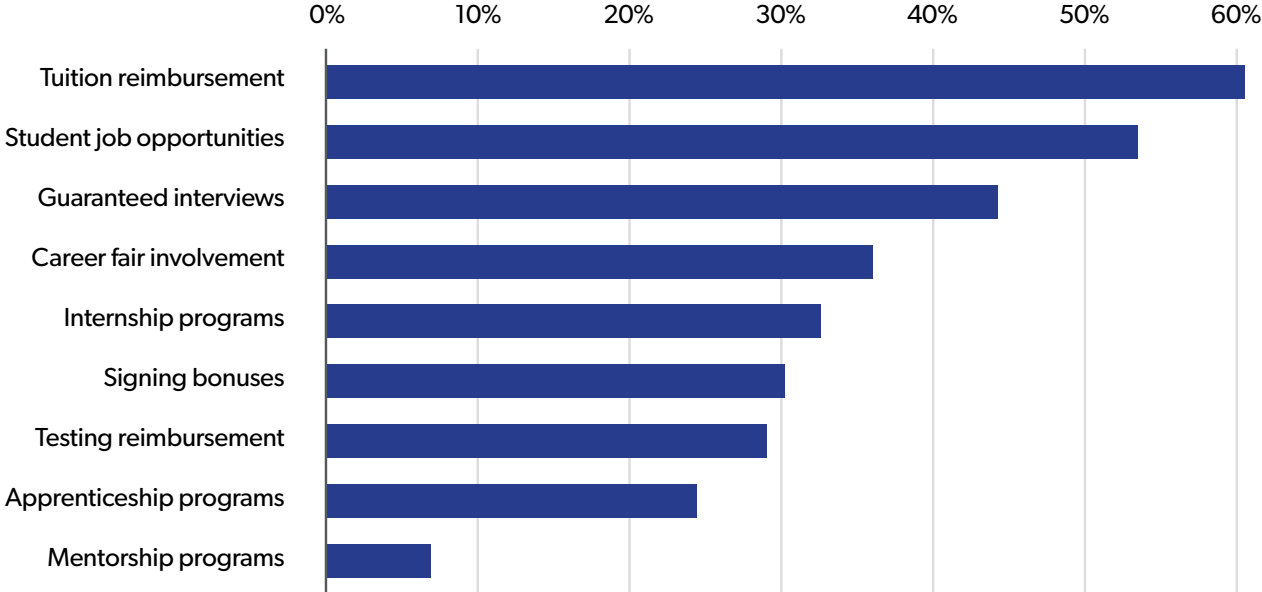
Source: Federal Aviation Administration (FAA)

¹Note: this estimate is derived from a 2020 Government Accountability Office report (GAO-20-206) stating that more than 22,000 service members with aviation maintenance backgrounds separated from the Air Force and Navy in 2018.

²The information is based on an analysis of FAA repair station and air operator data for entities certificated under 14 CFR parts 91, 133, and 137 (“general aviation”); parts 121, 125, 129, and 135 (“air carriers”); and part 147. The dataset does not include certificated employee counts for design approval holders, those that work as maintenance contractors, or those employed elsewhere in the supply chain.

This year’s survey results show that tuition reimbursement programs are seen as the most effective incentive for recruitment, indicating that financial support for education is a significant draw for prospective students. This may be particularly true for historically underrepresented groups. Additionally, opportunities for employment while enrolled, such as student job placements, underscore the importance of practical experience in attracting talent. Other notable factors include guaranteed interviews and career fair involvement, which facilitate direct connections between students and employers. Overall, these findings suggest that a combination of financial incentives and hands-on opportunities is crucial for effective recruitment in the aviation maintenance field.

Figure 6
“What type of involvement by industry appears to be most successful for recruiters?”
Percent of survey respondents, selecting all that apply



Source: Aviation Technician Education Council (ATEC) 2024 survey

PROJECTED SHORTAGE

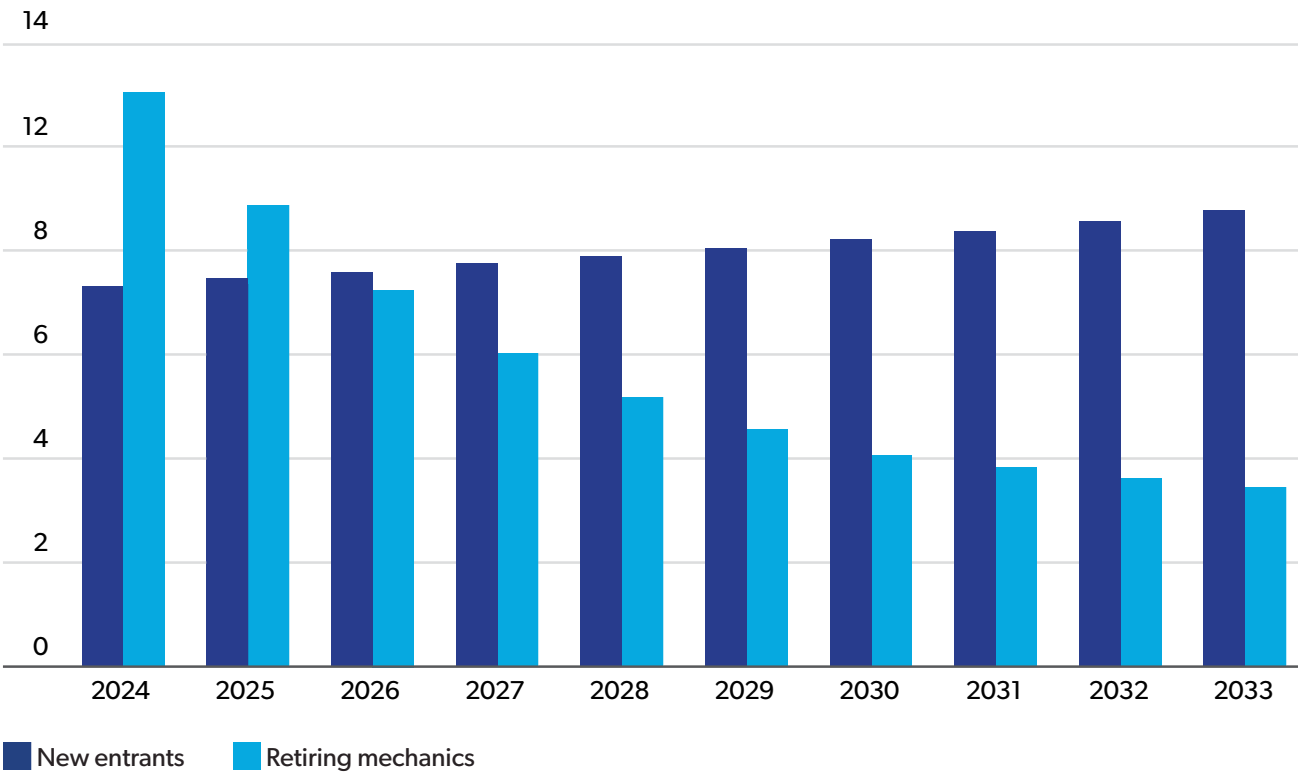
With the upcoming mass exodus of mechanics reaching retirement age, the influx of new mechanics will be insufficient to meet replacement needs for the next decade (Figures 7). Oliver Wyman’s analysis predicts a 9% shortage in certificated mechanics in North America this year (Figure 8).

By 2028, that deficit is expected to increase to nearly 25,000 certificated mechanics, a shortfall of nearly 20% versus demand. Workforce growth will reduce the gap thereafter, but as industry growth drives new demand, the certificated mechanic population is still expected to be about 11,200 short compared to North American commercial aviation needs in 2034.³ A similar trend is expected for non-certificated maintenance personnel, leading to a total aviation maintenance worker deficit of 37,000 in 2028 and 17,000 in 2034.

It is also worth noting that this projection does not include noncommercial needs for mechanics—meaning that for the foreseeable future there is no bandwidth at all to meet increased demand from rotorcraft, business aviation, general aviation, or emerging technologies.

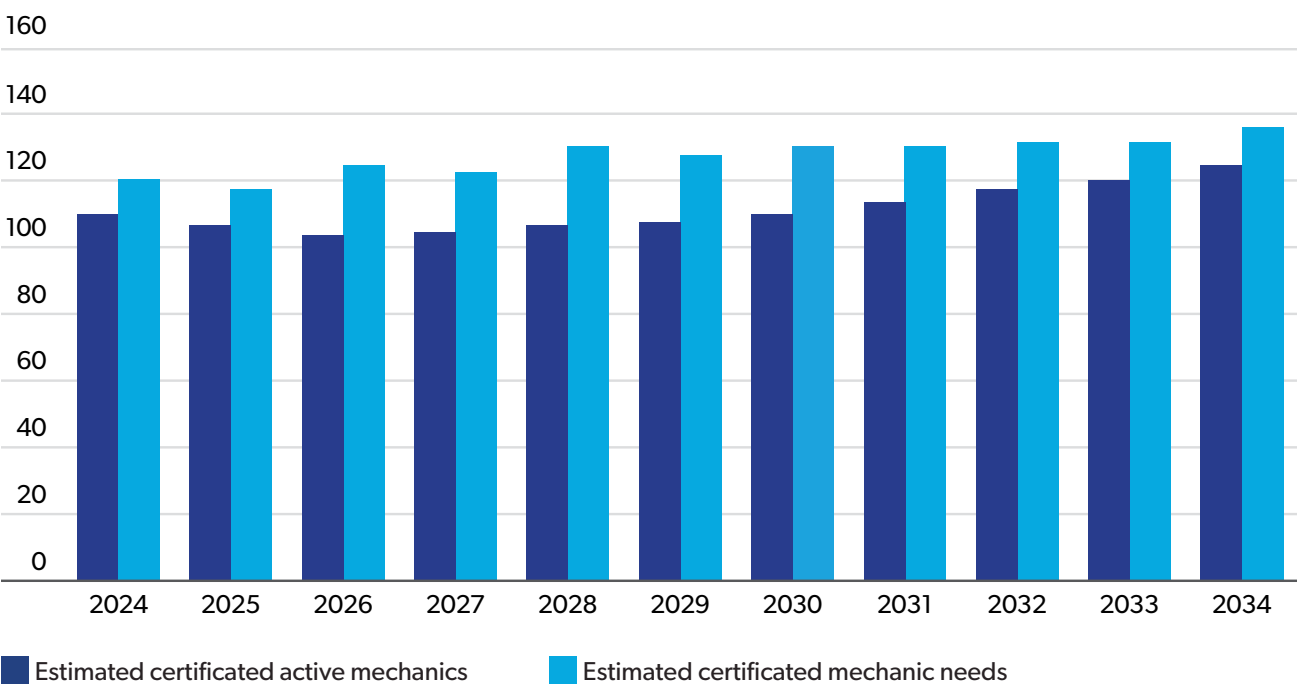
³The shortage calculation is based on Oliver Wyman’s AMT shortage projections, which predict the gap between the supply and demand of commercial aviation mechanics in the North America region. The prediction uses data and assumptions from US government sources as well as Oliver Wyman’s Fleet and MRO forecast.

Figure 7
Estimated North America Commercial New Mechanics vs. Retiring Mechanics, 2024-2033
Thousands



Source: Oliver Wyman and Aviation Technician Education Council (ATEC) analysis

Figure 8
Estimated Supply and Demand for Certified North America Commercial Aviation Mechanics, 2024-2034
Thousands



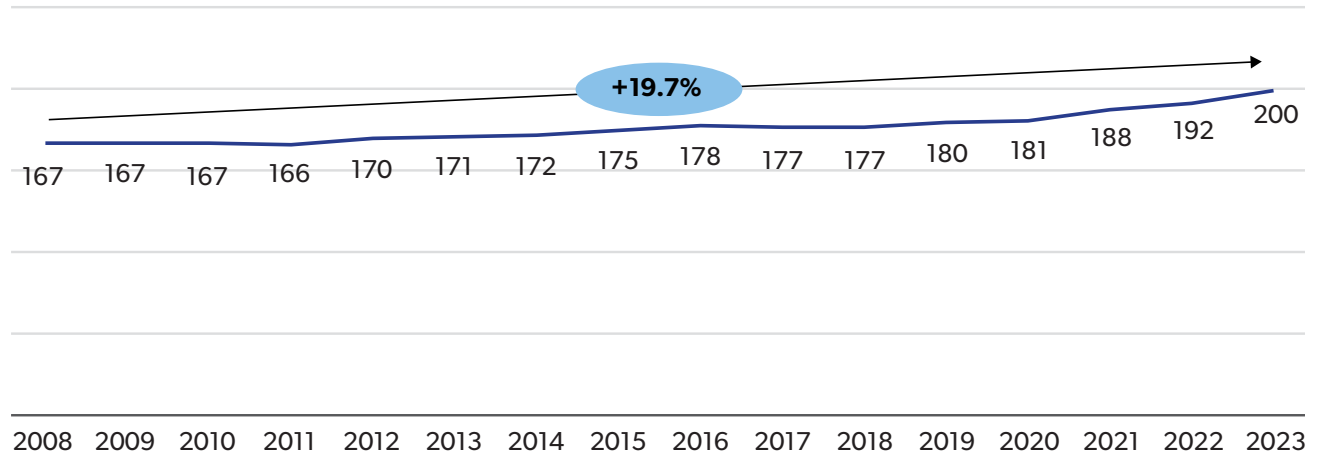
Source: Oliver Wyman and Aviation Technician Education Council (ATEC) analysis

AVIATION MAINTENANCE TECHNICIAN SCHOOLS

THE COMMUNITY

An additional eight AMTS were added in 2023, meaning that last year the FAA oversaw 200 AMTS in total (Figure 9). The AMTS community has expanded by 19 programs since 2020.

Figure 9
Total US Maintenance Technician Schools, 2008-2023



Source: Federal Aviation Administration (FAA)

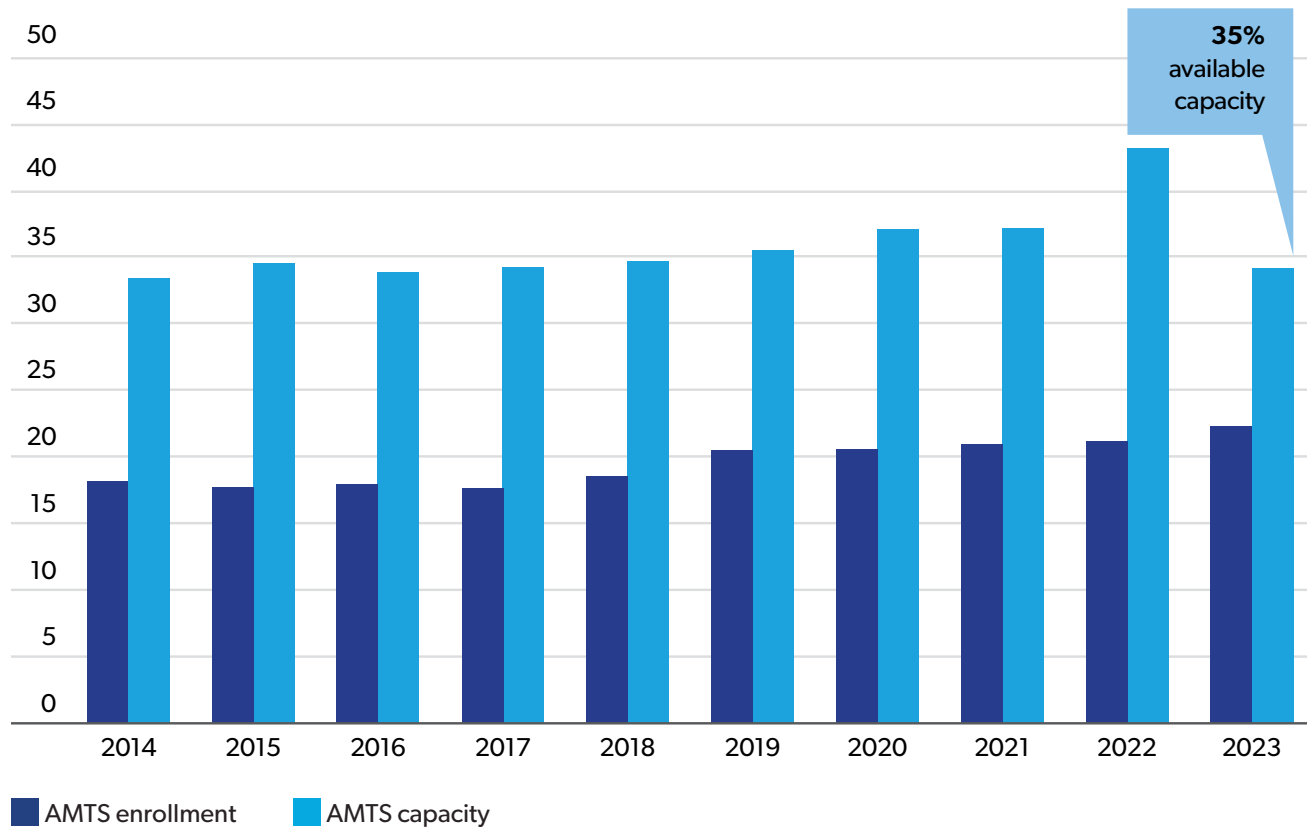
In less than a year after the new part 147 went into effect, 15 AMTS reported having added an additional training location to their FAA certificate’s operations specifications. Under the new rule, programs have newfound flexibility to teach away from their primary location, facilitating the extension of the A&P classroom to industry partner facilities, high schools, and other campuses. Last year, 20 AMTS reported having additional training locations. ATEC anticipates widespread use of the opportunity, expanding the footprint of aviation technical programs nationwide and increasing accessibility for potential students.

ENROLLMENT

AMTS enrollments in 2023 increased to 22,335, a 5.6% rise from the prior year. While encouraging and well above the ten-year average growth of 2%, the rate falls well short of the 15% annual growth necessary to meet projected workforce needs.

The AMTS student load factor (the ratio of available A&P program seats to enrolled students) reached 65% in 2023—a notable increase from previous years. While the rise is partly due to an uptick in enrollments of nearly 1,200 students, it is mostly attributable to changes in how “available capacity” is defined in this year’s report. In prior editions of the Pipeline Report, the FAA’s approved enrollment numbers for each AMTS were used to calculate capacity. Starting with this edition, ATEC’s survey asked AMTS how many students they could realistically enroll, considering resource limitations such as instructors and facilities. In many cases, AMTS reported that their actual capacity was lower than the FAA’s approved enrollment (which was required under the previous part 147), meaning this year’s report offers a more accurate reflection of how many seats remain unfilled due to a shortage of candidates – currently more than one in three.

Figure 10
US AMTS Enrollment vs. Capacity, 2014-2023
Thousands



Source: Aviation Technician Education Council (ATEC) 2024 survey

CHALLENGES AND OPPORTUNITIES

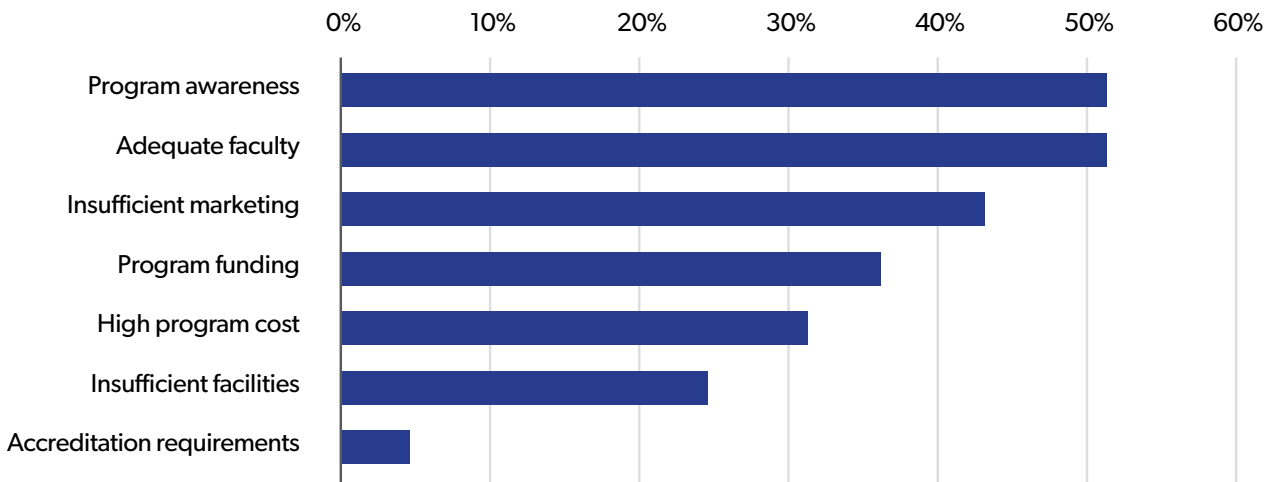
The primary obstacle to A&P program growth has been effectively eradicated through the reform of part 147—an enduring priority for ATEC. This accomplishment was achieved following an extensive advocacy campaign, culminating in the promulgation of an industry-crafted rule in September 2022.

For the second year in a row, survey respondents consider lack of program awareness to be the most significant barrier for program growth. Over half of the AMTS community cited this, along with difficulties in hiring faculty, as the main obstacles to expansion (Figure 11). ATEC has key initiatives aimed at addressing both these challenges.

Half of survey respondents cited marketing and advertising as the most significant factor in boosting enrollment, followed by the ability to usher students through the training cycle more efficiently under the new part 147. Choose Aerospace

While marketing and advertising are widely cited as the most effective ways to recruit students into an A&P program, most part 147 certificates are held by community colleges, which often lack the budget for extensive recruitment efforts. To address this, ATEC continues to partner with its sister organization, Choose Aerospace, to deploy general aviation maintenance curriculum to communities through partnerships with school districts, municipalities, employers, community-based organizations, and A&P schools.

Figure 11
“What are the most significant barriers to growth for your AMTS?”
Percent of survey respondents, selecting all that apply



Source: Aviation Technician Education Council (ATEC) 2024 survey

Choose Aerospace

Since its inception in 2020, 1,364 students have enrolled in the Choose Aerospace curriculum, with the vast majority participating in high school classrooms. The goal is for these students to either matriculate into A&P schools to complete their training or enter the workforce directly as non-certificated technicians.

While shifting from its start-up phase into a growth phase, the program is seeing great results. This past year, ATEC developed and presented the first ATEC Credential to a Choose Aerospace graduate evidencing knowledge in the FAA mechanic general subject areas. Oklahoma CareerTech pledged to cover curriculum and equipment costs for any high school STEM program in the state. Five hundred students were provided Choose Aerospace scholarships made possible by the FAA’s workforce development grant. Forty-six schools in 18 states applied to enroll over 1,000 students in the program this academic year. And in a student survey, 24% of Choose Aerospace enrollments were women—well above the 2.8% female mechanic representation nationwide.

If the initiative reaches its goal of enrolling 10,000 students by 2027, it has the potential to significantly increase interest in aviation maintenance careers, creating a strong pipeline of prospective students for A&P schools. This surge in interest could fill every available AMTS seat across the country, making a meaningful impact on the workforce shortage.

ATEC Academy

Instructor hiring challenges continue to plague the community—while enrollment is increasing, the size of instructional staff is flat at best. Last year, the ATEC Board set out to address the challenge by enrolling two cohorts in the ATEC Academy—a resource for maintenance professionals and retirees newly transitioning into teaching roles. Leveraging the expertise of master instructors in our community, the three-month course assists recently appointed instructors to overcome the challenges they will encounter in the classroom.

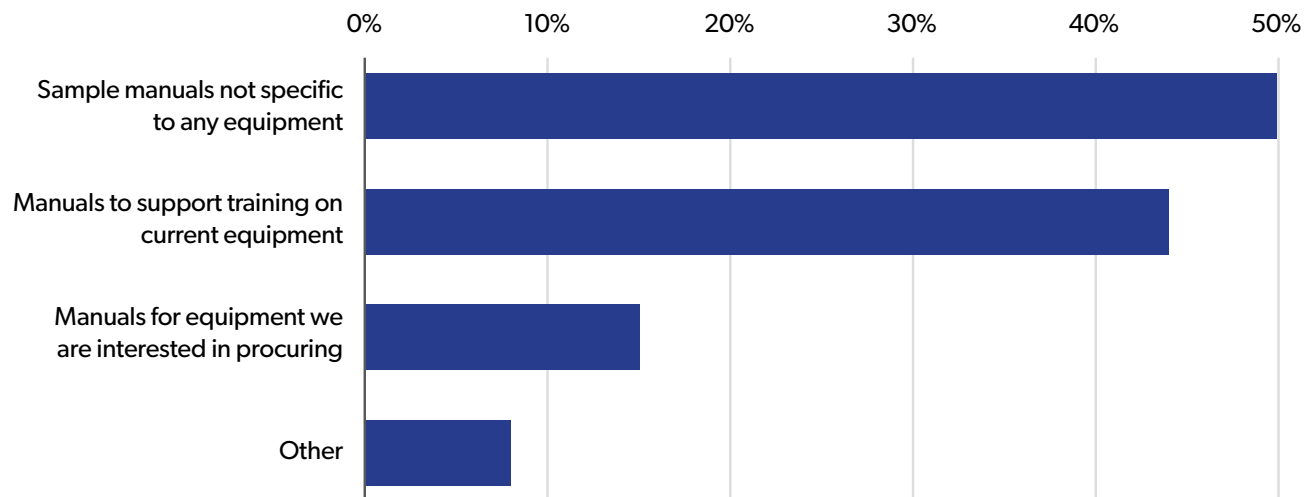
In July, ATEC announced its inaugural ATEC Academy graduating class, and in August, the second cohort kicked off. A third cohort is planned to kick off in the days preceding the upcoming ATEC Annual Conference in Norfolk.

Access to Technical Data

This year’s survey revealed significant gaps in the availability of technical data (Figure 12). Half of respondents indicated a need for sample manuals to aid training in troubleshooting, recordkeeping, and procedural adherence, indicating a demand for foundational resources not tied to specific equipment. Additionally, AMTS emphasized the need for manuals that align with equipment used in their curriculum, highlighting an opportunity for industry to get technical information to education partners and help close the knowledge gap for new entrants with little exposure to maintenance procedures they will see on day one of the job.

Figure 12
“What are your biggest needs with regard to technical data?”

Percent of survey respondents, selecting all that apply



Source: Aviation Technician Education Council (ATEC) 2024 survey

DEMOGRAPHICS

Seventy-seven percent of A&P programs are public institutions; the remainder are private proprietary programs (16%) and private nonprofit institutions (8%). Over half of all A&P students are enrolled at one of the 10 largest A&P programs.

Nearly half of all A&P students reside in Florida, New York, Texas, California, or Alabama. Georgia has dropped down two rankings from last year, a 16% decrease, and Alabama has taken its place. New Hampshire, Montana, and Colorado saw the fastest growth last year, reporting increases in enrollments of 243%, 127%, and 84%, respectively.

The regions experiencing significant demand for aviation maintenance align with areas marked by high supply. According to Oliver Wyman’s analysis, the top five states with the highest employment ratio in aviation maintenance have all changed and are now Oklahoma, Kansas, Alaska, Georgia, and Washington, D.C.—none of which are among the top five states with the highest AMTS enrollment.

⁴The forecast is published in partnership with the Aeronautical Repair Station Association (ARSA). Its state-by-state analysis is available at <https://arsa.org/wp-content/uploads/2024/03/OW-2024Report-OnePager-USStateByState.pdf>

Table 1
AMTS Enrollment State Ranking, 2023

2023 Rank	State	2023 A&P students	Percent change (2022 to 2023)	2023 Rank	State	2023 A&P students	Percent change (2022 to 2023)
1	FL	2,984	14%	25	NJ	211	-50%
2	NY	2,724	2%	26	MN	209	0%
3	CA	2,021	13%	27	KY	142	12%
4	TX	2,005	1%	28	OR	137	7%
5	AL	993	9%	29	WV	125	2%
6	MI	835	41%	30	MD	119	9%
7	GA	800	-13%	31	PR	115	0%
8	OH	773	13%	32	AR	113	31%
9	OK	696	21%	33	WI	105	50%
10	IL	661	-13%	34	AK	99	-4%
11	IN	608	0%	35	LA	90	-9%
12	NC	584	24%	36	CT	67	-39%
13	CO	514	84%	37	MS	56	56%
14	AZ	509	8%	38	NM	51	-7%
15	TN	481	-20%	39	IA	50	-24%
16	PA	470	-13%	40	HI	49	0%
17	VA	459	-6%	41	ID	48	17%
18	KS	409	20%	42	DC	44	0%
19	NV	394	32%	43	MT	34	127%
20	WA	372	-3%	44	DE	31	63%
21	MA	308	6%	45	SD	25	0%
22	MO	266	21%	46	NH	24	243%
23	UT	255	-10%	47	NE	13	-35%
24	SC	245	-9%	48	VT	12	0%

Source: Aviation Technician Education Council (ATEC) 2024 survey

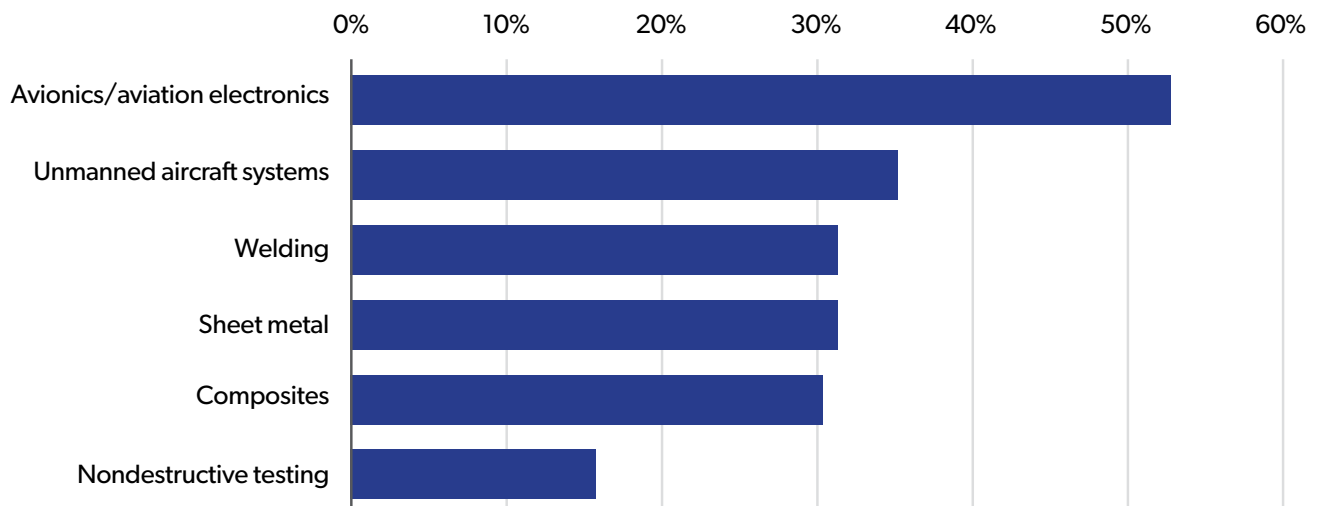
PROGRAMS AND DEGREES OFFERED

To meet the growing demand for specialized services, more than half of all AMTS provide stand-alone, aviation-related programs outside an A&P program, including welding, avionics, and unmanned aircraft systems (Figure 13).

Figure 13

“Outside of the A&P program, what standalone technical aviation-related programs does your institution offer?”

Percent of survey respondents, selecting all that apply



Source: Aviation Technician Education Council (ATEC) 2024 survey

The Aircraft Electronics Technician (AET) certification moved to the second-most popular third-party credential for A&P programs and was replaced by NC3 Precision Measuring Instruments and NC3 Multimeter certification. Closely following behind AET is NC3 Torque Fundamentals certification and NC3 Structural Sheetmetal Assembly.

Fifty-one percent of all AMTS offer the A&P program as part of an associate’s degree. Another 9% offer an A&P program as part of a 4-year degree. The high school community holds 11 part 147 certificates.

GRADUATES

Demographics and Matriculation

In 2023, AMTS graduated an estimated 10,300 A&P students. The average graduation rate for an A&P program was 50%, an almost 20% decrease from the prior year; hopefully, this represents the final lingering effects of the COVID-19 pandemic. The average age of an A&P graduate is 24.

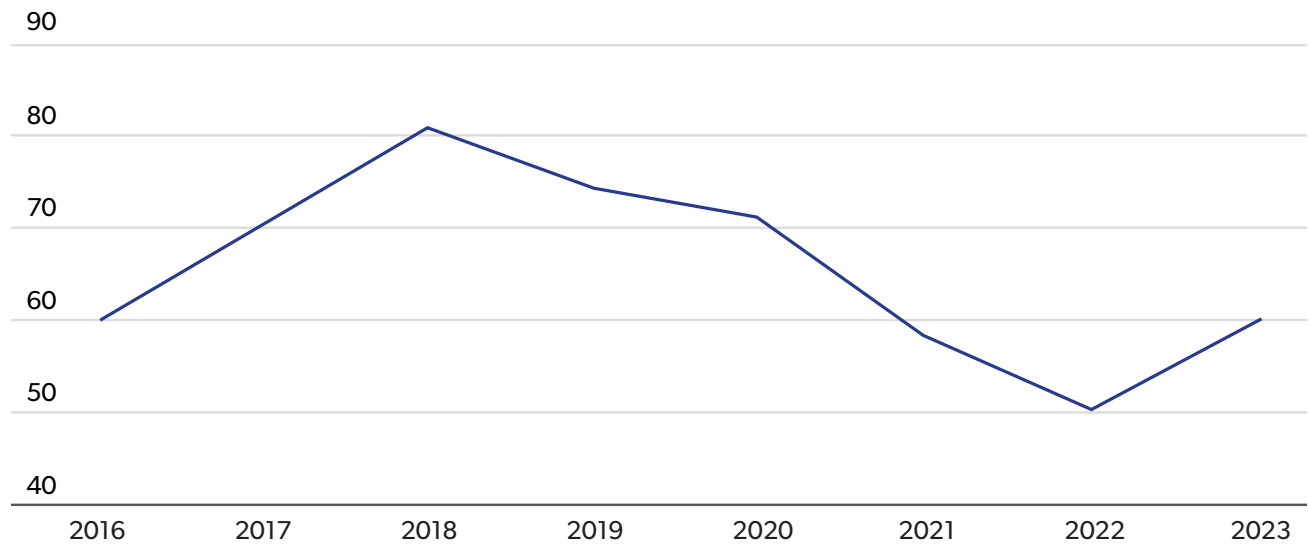
Consistent with previous years, 19% of graduates are veterans and 62% are a racial or ethnic minority. Foreign nationals made up 10% of the 2023 student population. Women made up 11% of the AMTS student body in 2023, an almost 4% increase from the year before.

FAA Testing

The number of graduates obtaining FAA mechanic certification increased for the first time in four years. In 2023, 60% of A&P graduates attempted and passed the FAA mechanic exam (Figure 14).

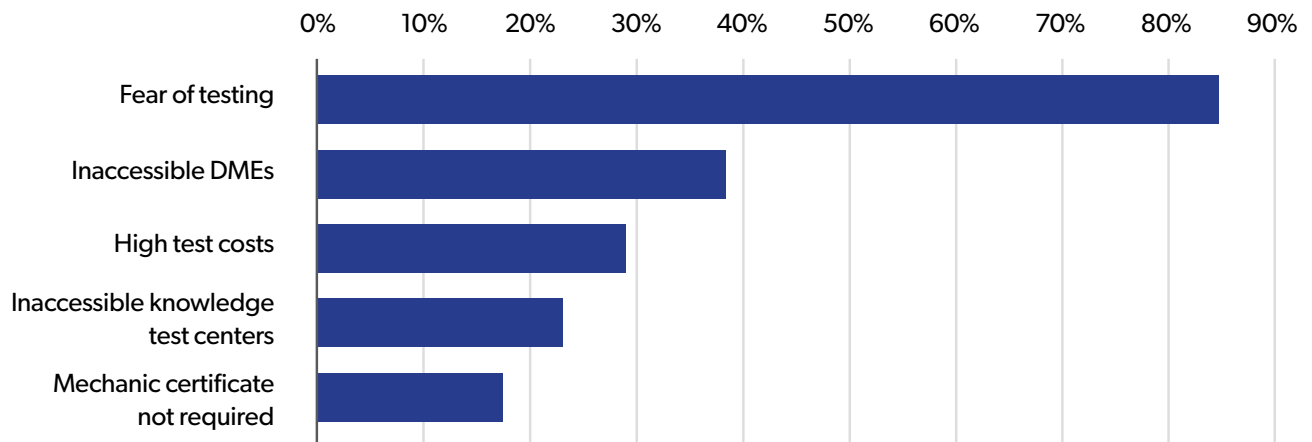
The primary barriers to obtaining a mechanic certificate cited by survey respondents include fear of testing, inaccessible DMEs, and high test costs (Figure 15). Some 85% of respondents mentioned fear of testing as a significant factor, and 38% said graduates are deterred by inaccessibility of Designated Mechanic Examiners (DMEs).

Figure 14
US AMTS Graduates Obtaining Mechanic Certification, 2016-2023
Percent



Source: Aviation Technician Education Council (ATEC) 2024 survey

Figure 15
“What is the most significant barrier to obtaining a mechanic certificate for AMTS program graduates?”
Percent of survey respondents, selecting all that apply



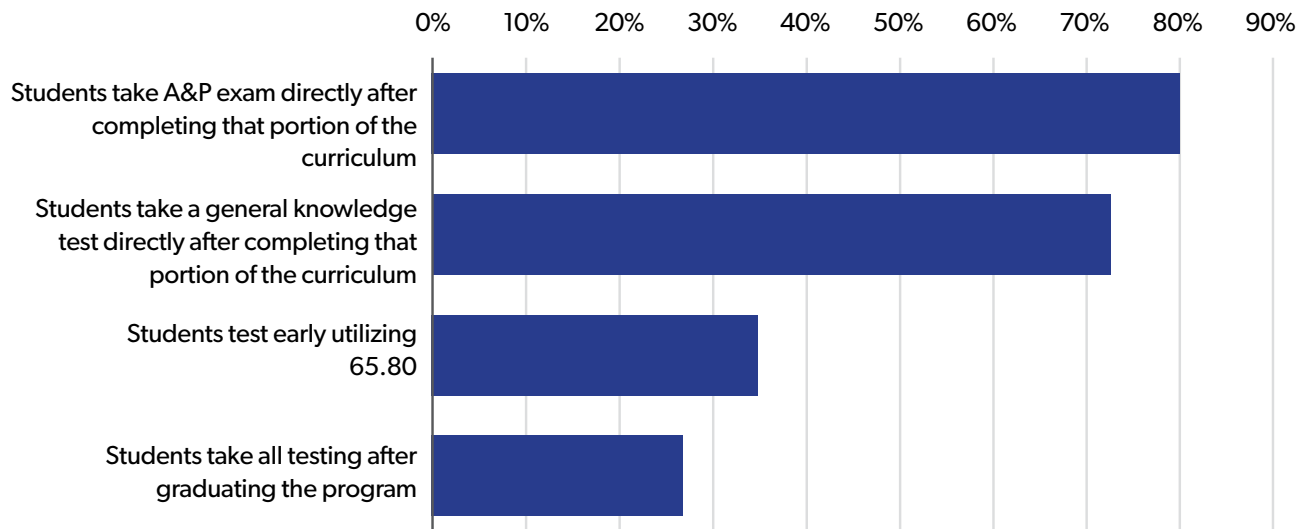
Source: Aviation Technician Education Council (ATEC) 2024 survey

Fear of testing has long been cited as a reason candidates do not sit for an A&P exam; progressive testing is one way to help combat this. Responses to this year’s survey indicate that most aviation maintenance schools have adopted such progressive testing in their programs; that is, students take an FAA test immediately after completing the applicable curriculum (Figure 16).

This practice was not highly utilized prior to promulgation of the new part 147, likely due to the challenges associated with seeking and obtaining FAA approval of program changes. The resulting increase in student certifications since this practice has come into use testifies to the positive impacts progressive testing can have on certification rates. ATEC will continue to promote progressive testing as a best practice for A&P schools, to eliminate the idea that FAA testing is “elective.”

Early testing using Part 65.80 is utilized by a third of A&P schools, offering a flexible approach to accommodate varying student readiness.

Figure 16
“How does your AMTS approach mechanic testing?”
Percent of survey respondents, selecting all that apply



Source: Aviation Technician Education Council (ATEC) 2024 survey

Testing Capacity

A lack of DMEs is a problem for nearly one in five AMTS, a fact that is continuing to drive ATEC initiatives focused on expanding access to FAA airman testing. Last year, the FAA delegated 9,383 original issue mechanic tests to 257 examiners. Given annual AMTS graduates and the average number of tests administered per DME each year, the existing DME population would need to expand by almost 30% to accommodate all AMTS graduates.

Without a rapid increase in the number of mechanic examiners to support the system, testing capacity is on track to become the most significant bottleneck in the certification process as industry initiatives to increase enrollments and certification rates gain momentum.

ATEC has long advocated for the FAA to expand testing capacity by incorporating airman certification into the Organization Designation Authorization (ODA) program. The program was established in 2005 to streamline the certification process and leverage the expertise of organizations to perform certain certification functions on behalf of the FAA. A draft revision to FAA guidance published in July would create an Airman Certification ODA (AC ODA), allowing many air agency certificate holders, including part 147 schools, to manage and conduct oral and practical testing for airframe and/or powerplant ratings and better meet student demand. If the FAA sticks to its current anticipated timeline, the program expansion may finally come to fruition next year.

Allowing schools (and in some instances, industry partners) to manage examiners to better meet student demand would go a long way toward expanding current capacity. In addition, ATEC has asked the agency to modify DME qualifications and remove geographic limitations for a more practical approach to delegation and designee oversight.

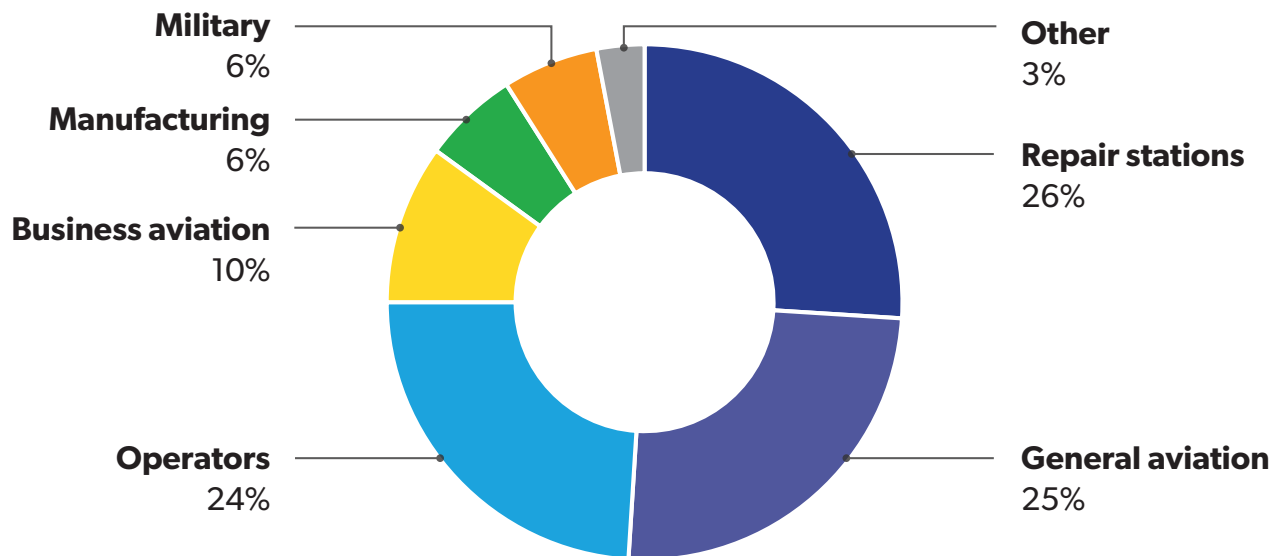
Employers

Forty-one percent of new AMTS graduates had a job offer upon graduation and 40% of those jobs were in aviation. Nearly a third of students took a job outside of their geographic location, suggesting a good portion of new entrants are migrating from home to areas of higher demand.

Among industry sectors actively hiring, repair stations, general aviation, and operators account for nearly three-quarters of new graduate hires (Figure 17).

Figure 17
“Of the 2023 graduates employed by an aviation-related employer, how many were placed in each of the following sectors?”

Percent of survey respondents



Note: “Other” includes government, education, and UAS

Source: Aviation Technician Education Council (ATEC) survey

Salary and Wages

Survey respondents report an average starting hourly rate for AMTS alumni with an FAA certificate to be \$31.58 per hour (or \$63,160 annually), an increase of 12% from a year ago. Today, certificated mechanics are making 24% more than their peers that graduated just 2 years ago.⁵

Starting hourly pay for A&P graduates without a mechanic license is \$21.17 per hour, an increase of 7% over last year. This is more than \$21,700 a year less than their certificated peers make, however.

These figures track broadly with US Bureau of Labor Statistics data that shows median pay for mechanics and technicians, certificated and uncertificated, is about \$36.60 per hour, or \$75,500 per year.

⁵The shortage calculation is based on Oliver Wyman’s AMT shortage projections, which predict the gap between the supply and demand of commercial aviation mechanics in the North America region. The prediction uses data and assumptions from US government sources as well as Oliver Wyman’s Fleet and MRO forecast.

Return on Investment

Tuition costs are not generally seen as a barrier to commencing an aviation technical career, given the relatively low cost of A&P programs compared to income potential.

ATEC research and analysis of published tuition data (regardless of the degree conferred) for all AMTS found the average tuition for an A&P program is \$19,427. Rates are lower for public community colleges, with average tuition costs of \$12,204.

The average time it takes for a student to complete an A&P program is 21 months (one month shorter than last year's average), with 12 institutions reporting completion opportunities in 12 months or less.



ATEC ACADEMY



Educator Professional Development

**Saturday & Sunday
March 16, 2025**

**Hilton Norfolk
The Main
100 East Main Street
Norfolk, VA 23510**

ATEC Academy is a fresh initiative led by executive leadership, addresses the escalating difficulty in recruiting and retaining skilled instructors amidst the rising demand for technical workforce.

ATEC Academy ran its first cohort of students in March 2024, with rave reviews. Facilitators have taken feedback and lessons learned during the initial course to make improvements to the curriculum, to include adding a section specifically addressing teaching of hands on labs.

Conducted by a seasoned educator with years of experience teaching teachers, and supported by a group of expert A&P master teachers mentoring participants, the course is limited to just 20 seats.

Register now before seats fill up at
atec-amt.org/events/atec-academy---spring-2025



AVIATION MAINTENANCE TECHNICIAN SCHOOL DIRECTORY

Full programmatic and contact information for all aviation maintenance technician schools is available to ATEC members at www.atec-amt.org.

ATEC member schools in blue

*Program contributed to the ATEC survey

AK

University of Alaska Anchorage

University of Alaska Fairbanks*

Yuut Elitnaurviat Regional AMT School*

AL

Alabama Aviation College – Albertville

Alabama Aviation College – Mobile

Alabama Aviation College – Ozark*

Southern Union State Community College

AR

Arkansas Northeastern College

Arkansas State University Mid-South*

Southern Arkansas University Tech – Camden*

University of Arkansas – Pulaski Technical College

AZ

Chandler Gilbert Community College

Pima Community College*

Western Maricopa Education Center

CA

Antelope Valley College

Aviation Institute of Maintenance – Fremont*

California Aeronautical University*

Chaffey College

College of Alameda*

Cuesta College*

Gavilan College*

MT San Antonio College

North Valley Occupational Center

Orange Coast College

Reedley College

Sacramento City College

San Bernardino Valley College

San Diego Miramar College*

San Joaquin Valley College

Solano Community College*

Spartan College of Aeronautics and
Technology – Los Angeles*

Spartan College of Aeronautics and
Technology – Riverside

Victor Valley College

West Los Angeles College

CO

Cherry Creek Innovation Campus

Colorado Northwestern Community College*

Spartan College of Aeronautics and Technology – Denver*

Warren Tech South

CT

Connecticut Aero Tech School

Stratford School for Aviation Maintenance Technicians

DC

University of the District of Columbia Community College*

DE

Delaware Technical Community College*

FL

Aviation Institute of Maintenance – Orlando*

Aviator College

Broward College

Central Florida Aerospace Academy

Charlotte County Public Schools

Eastern Florida State College

Embry-Riddle Aeronautical University

Epic Aviation

Florida State College at Jacksonville

George Stone Technical College

George T. Baker Aviation Technical College*

International AeroTech Academy*

Lively Technical College

Lorenzo Walker Technical College*

National Aviation Academy Inc – Clearwater

Northwest Florida State College

Tom P. Haney Technical College

Universal Technical Institute – Miramar

GA

Atlanta Technical College

Augusta Technical College

Aviation Institute of Maintenance – Atlanta*

Central Georgia Technical College

Georgia Northwestern Technical College*

Middle Georgia State University*

Savannah Technical College*

South Georgia Technical College

HI

Honolulu Community College – Dept of Aeronautics

IA

Des Moines Public Schools*

Indian Hills Community College*

Iowa Western Community College

Kirkwood Community College

ID

Idaho State University*

IL

Aviation Institute of Maintenance – Chicago*

Lewis University

Lincoln Land Community College

Rock Valley College

Southern Illinois University Carbondale

Southwestern Illinois College*

IN

Aviation Institute of Maintenance – Indianapolis*
Ivy Tech Community College*
Purdue University
Vincennes University Aviation Technology Center*

KS

WSU Tech

KY

Jefferson Community and Technical College
Maysville Community and Technical College
Somerset Community College

LA

Baton Rouge Community College
South Louisiana Community College
Southern University at Shreveport*
Sowela Technical Community College

MA

Cape Cod Community College
National Aviation Academy Inc – New England
Westfield Technical Academy

MD

Pittsburgh Institute of Aeronautics – Hagerstown*

ME

University of Maine - Augusta

MI

Andrews University
Lansing Community College*
Legacy Aviation Learning Center*
MIAT College of Technology – Canton
School of Missionary Aviation Technology*
Western Michigan University – College of Aviation*

MN

Lake Superior College
Minneapolis College*
Northland Community and Technical College*

MO

Aviation Institute of Maintenance – Kansas City*
Gateway High
State Technical College of Missouri

MS

Hinds Community College
Northwest Mississippi Community College
Pearl River Community College

MT

Helena College University of Montana*

NC

Aviation Institute of Maintenance – Charlotte*
College of the Albemarle*
Craven Community College
Forsyth Technical Community College
Guilford Technical Community College
Wayne Community College*

NE

Western Nebraska Community College

NH

Nashua Community College

NJ

Aviation Institute of Maintenance – Teterboro*

NM

Central New Mexico Community College

Eastern New Mexico University – Roswell

NV

Aviation Institute of Maintenance – Las Vegas*

NY

Aviation High School

Aviation Training Institute at Vaughn College

Dutchess Community College*

Hudson Valley Community College

Lewis Wilson Technology Center*

Mohawk Valley Community College

OH

Cincinnati State Technical and Community College*

Columbus State Community College*

Federal Aerospace Institute*

Great Oaks Joint Vocational School*

Greene County Career Center

Mahoning County Career & Technical Center*

Miami Valley Career Technology Center*

Pittsburgh Institute of Aeronautics – Youngstown*

Sinclair Community College

Toledo Public Schools – Aerospace Center

OK

Canadian Valley Technology Center

Gordon Cooper Technology Center

Metro Technology Center

Moore Norman Technology Center*

Southwest Technology Center*

Spartan College of Aeronautics and Technology – Tulsa

Tulsa Technology Center

OR

Columbia Gorge Community College*

Lane Community College*

Portland Community College*

PA

Aviation Institute of Maintenance – Philadelphia*

Johnson College

Pennsylvania College of Technology

Pittsburgh Institute of Aeronautics – Pittsburgh*

Saint Francis University

PR

Puerto Rico Aviation Maintenance Institute

SC

Greenville Technical College

Pittsburgh Institute of Aeronautics – Myrtle Beach*

Trident Technical College

SD

Lake Area Technical Institute

TN

Middle Tennessee State University*

North Central Institute*

Northeast State Community College

Tennessee College of Applied Technology – Memphis

Tennessee College of Applied Technology – Morristown*

Tennessee College of Applied Technology – Nashville

TX

Amarillo College*

Aviation Institute of Maintenance – Dallas*

Aviation Institute of Maintenance – Houston*

Crowley Academy of Aviation

Del Mar College*

Hallmark University

LeTourneau University

Midland College

Skyline Career Development Center

Southwest Texas Junior College

St. Philips College

Tarrant County College

Texas State Technical College – Abilene

Texas State Technical College – Harlingen

Texas State Technical College – Waco*

Thrust Institute of Maintenance

U.S. Aviation Academy – Denton*

Universal Technician Institute – Houston

UT

Salt Lake Community College*

Southern Utah University

Utah State University*

VA

Aviation Institute of Maintenance – Manassas*

Aviation Institute of Maintenance – Norfolk*

Blue Ridge Community College*

Liberty University*

VT

Burlington Technical Center

WA

Big Bend Community College

Clover Park Technical College*

Everett Community College*

Moody Bible Institute, Moody Aviation*

South Seattle College

Spokane Community College

WI

Fox Valley Technical College

Milwaukee Area Technical College

WV

Marshall University Aviation Maintenance Technology Program

Pierpont Community and Technical College

CHOOSE AEROSPACE

Developed by ATEC's sister foundation,
in collaboration with Part 147 program
instructors and industry stakeholders.

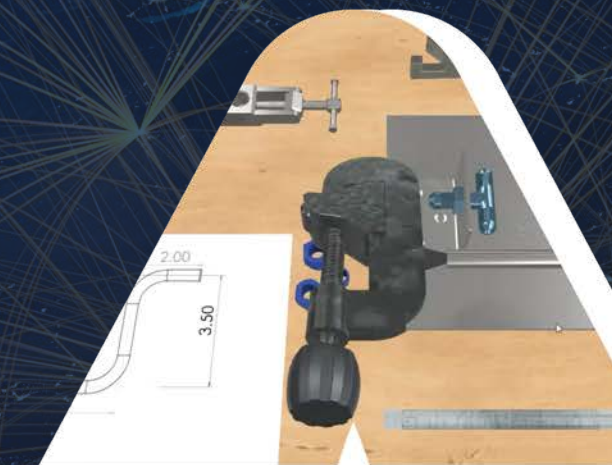
- First of its kind, computer-based curriculum developed to build pipelines into aviation maintenance technician schools
- Aligns with the general portion of Federal Aviation Administration Mechanic Airman Certification Standards
- Intended for deployment in high schools to aid dual enrollment and/or credit bearing opportunities for students matriculating into FAA-certificated programs to complete the airframe and/or powerplant coursework



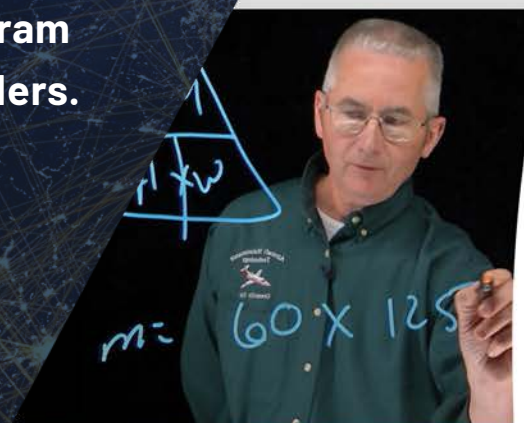
CHOOSE
AEROSPACE

FOR MORE INFORMATION

email careers@chooseaerospace.org
or visit chooseaerospace.org/curriculum



we need to deburr the line. Deburr the internal edge using the deburr tool till the edges are smoothed out. Rotate the cutting wheel by clicking and dragging up or





 OliverWyman

