A Brief Overview for Part 147 Programs

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About

Choose Aerospace is a non-profit, 501(c)(3) partnership of aerospace stakeholders, joined together to address one of the biggest threats to continued industry growth: the availability of a diverse, qualified technical workforce.

It works in close partnership with the Aviation Technician Education Council, the organization that represents schools certificated by the Federal Aviation Administration to train aviation mechanics.

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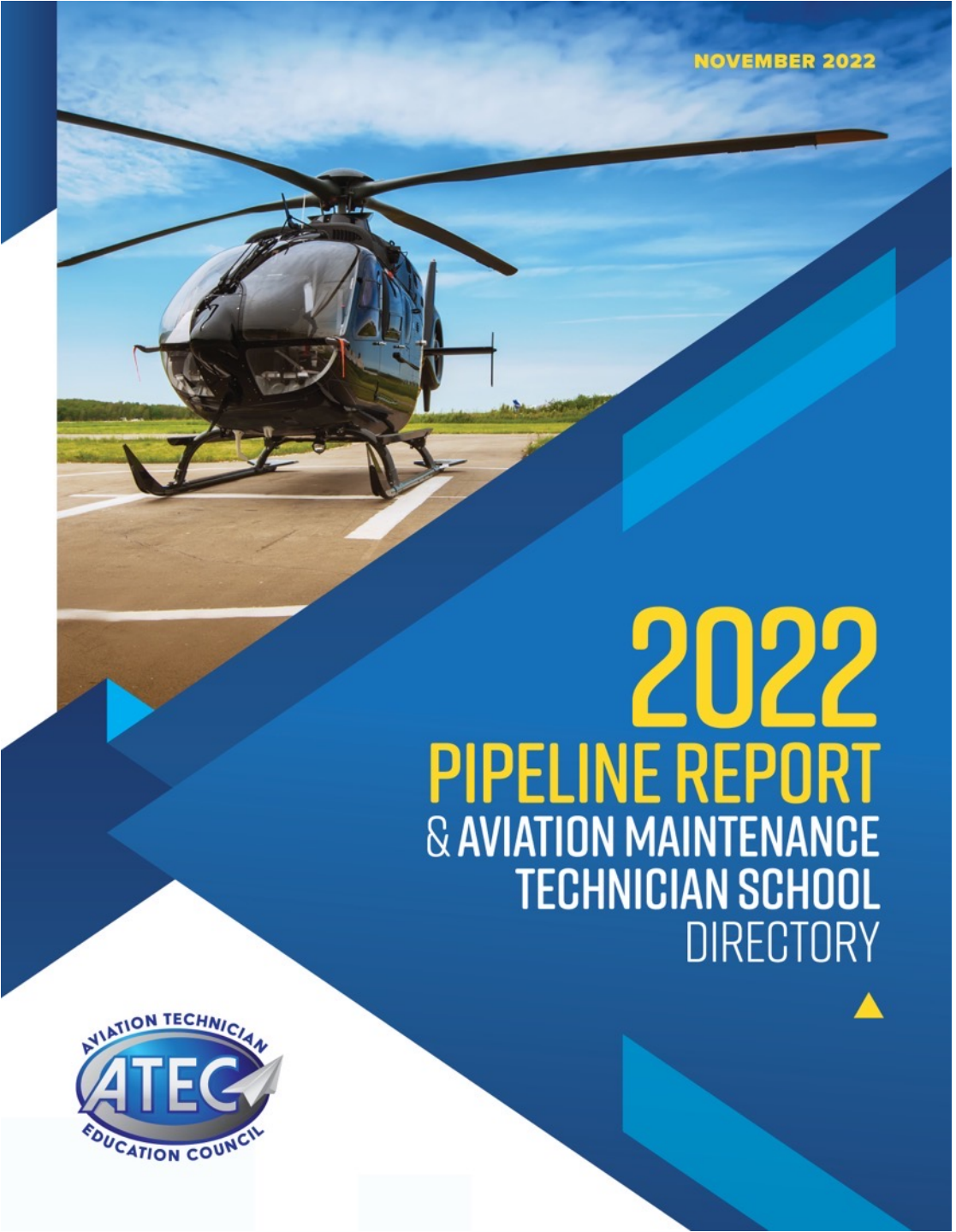
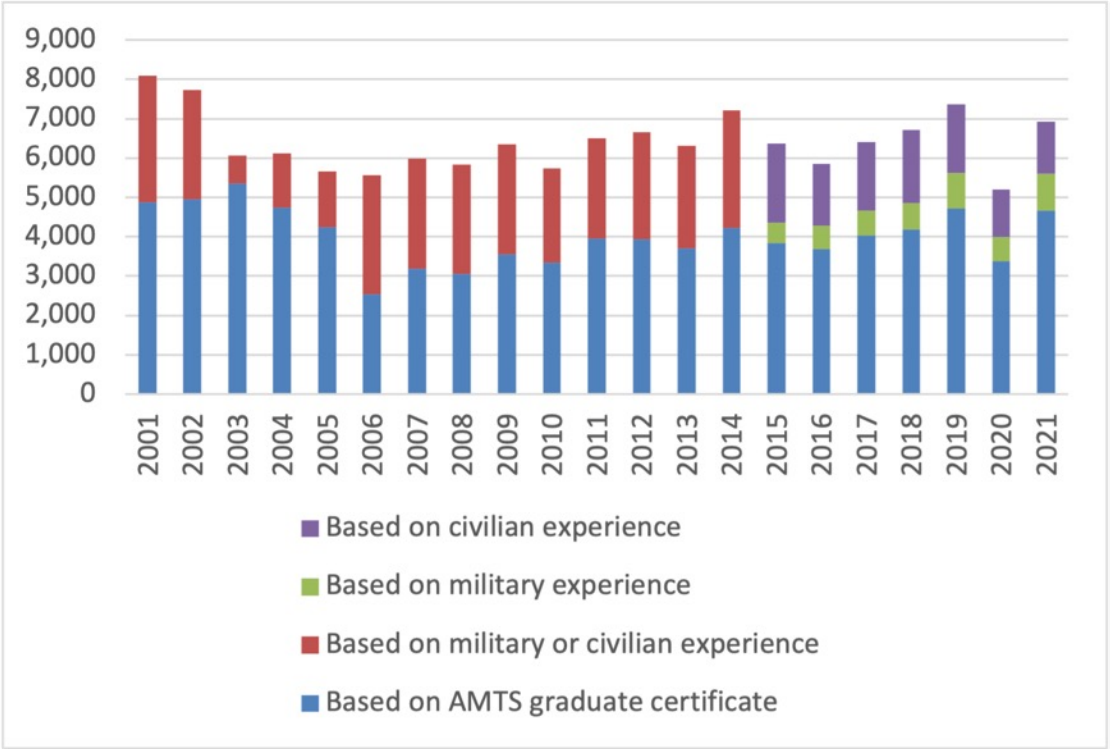


Mechanic Shortage

- Boeing: 690,000 new technicians needed to support commercial fleet over the next 20 years—125,000 of those in North American
- Oliver Wyman: the gap between supply and demand will reach between 8 and 12 precent this year with the larger shortage anticipated later this decade.
- ARSA: the technician shortage is costing the repair station industry $100 million per month.
- ATEC: Workforce pipeline is stagnant at best, growing only 2 percent a year. **Production must increase by 20 percent to meet JUST commercial demand.**

The Pipeline

- Total population of mechanic certificates: 320,000
- New mechanics in 2022: 7,119
- **Sixty seven percent** of new mechanics come through A&P school. **Fourteen percent** obtain certification based on military experience and **nineteen percent** from civilian work experience.
- A&P **enrollment is 21,089**. Year-over-year growth is **2.2 percent a year**, well short of the **21 percent annual increase** needed to meet projected needs for the commercial market alone.



Reforms and Opportunities

- New FAA regulations published last year, removed outdated seat time and curriculum requirements and replaced with performance-based rule that defers quality oversight to Dept. of Education.
- The national student load factor—that is, the number of available AMTS seats vs. enrollment—is 56. **Increase awareness in communities to fill A&P programs.**
- High school partner programs are one of the best feeders for FAA-certificated maintenance schools, but they are not common given the high costs associated with necessary facility, equipment, and materials.

Sequence of Courses

This modular content facilitates a flexible approach to meet a wide-range of schedule and program needs. For example, the approximately 500 hours of content can be delivered in a full-time, 12-week program for adult learners, or as an elective in the 11th and 12th grade year of high school.

The following courses make up the entire suite of aviation maintenance curriculum. We have provided a suggested order for completion below.

01	FAA-ACS-AM-IF-GOS	Safety, Ground Operation, and Servicing
02	FAA-ACS-AM-IK-HTM	Hand Tools and Measuring Devices
03	FAA-ACS-AM-IC-WAB	Weight and Balance
04	FAA-ACS-AM-IH-MAT	Mathematics
05	FAA-ACS-AM-IJ-PFA	Physics for Aviation
06	FAA-ACS-AM-II-MIR	Maintenance and Inspection Regulations
07	FAA-ACS-AM-IB-ACD	Aircraft Drawing
08	FAA-ACS-AM-IA-FEE	Fundamentals of AC Electricity
09	FAA-ACS-AM-IA-FEE	Fundamentals of DC Electricity
10	FAA-ACS-AM-ID-FLF	Fluid Lines and Fittings
11	FAA-ACS-AM-IE-MHP	Materials, Hardware, and Processes
12	FAA-ACS-AM-IG-CCC	Cleaning and Corrosion Control

Maintenance Curriculum

- Created to make aviation technical content more accessible and build pipelines into part 147 schools.
- Developed in partnership with Clemson University Center for Workforce Development and ARCS Aviation.
- Five hundred hours of content covers the general subject areas in the FAA Mechanic Airman Certification Standards.
- Includes computer-based curriculum with hands-on labs and activities in accompanying instructor guides.
- Supply list and kits available in the Choose Aerospace Store.

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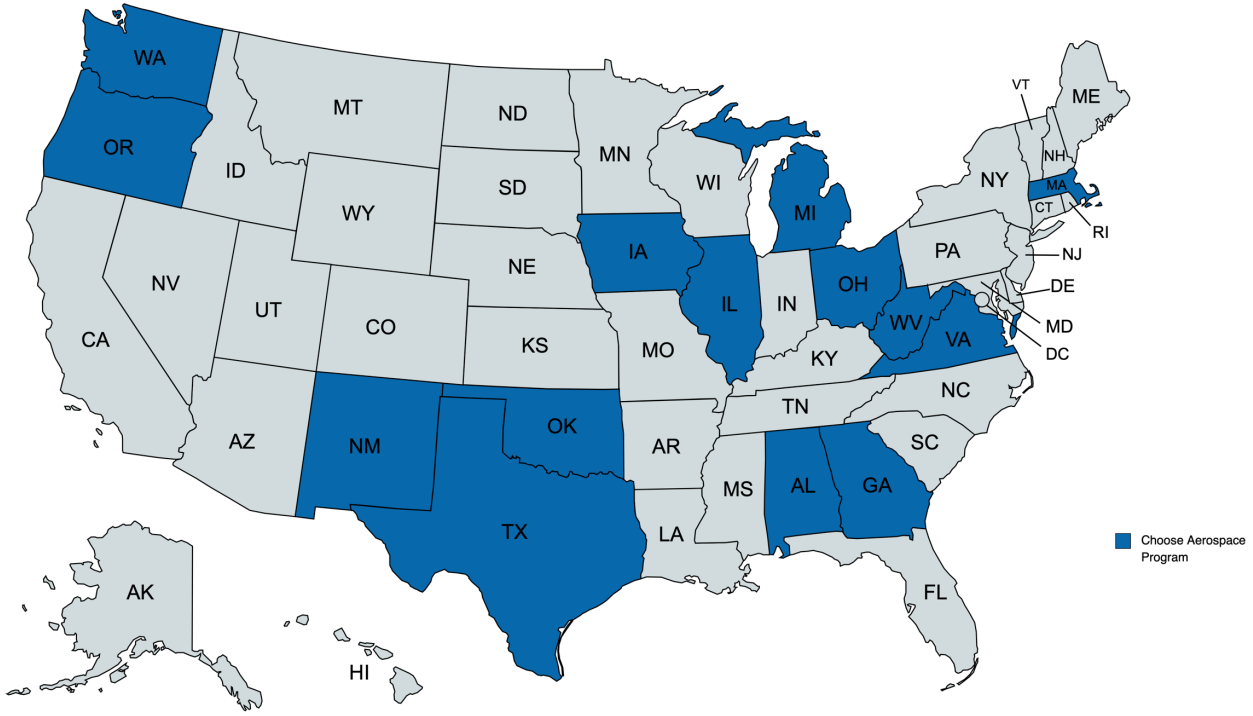
Participating Programs



	States	Schools	Students
2021-2022 Pilot Test	8	9	140
2022-2023 Academic Year	6	15	189
2023-2024 Academic Year (applied)	14	27	891

Program Development

- ATEC credential to facilitate matriculation and direct-hire opportunities
  - Requires completion certificates from all 12 courses; and
  - Passage of the ATEC exam
- Facilitate pathways to certification
  - Matriculate into A&P schools
  - Go direct to work as a non-certificated technician
  - Feed into apprenticeship program
- ATEC Academy
- Commonly Asked Questions

Q: Is a Choose Aerospace graduate eligible to take the FAA general written knowledge test?

A: Not unless the student is also enrolled at a part 147 program and/or has the requisite 18-30 months of experience.

Q: Under part 147, can my program provide credit to a student that has completed the general curriculum in high school? Even if that program is not certified by the FAA?

A: Yes. Under § 147.23, if your part 147 program is part of a nationally accredited institution, you can use your institution's policies and procedures for issuing credit for previous instruction, the way the institution would for any other program.

Q: Will the Choose Aerospace student's performance on the general written test impact my program's minimum passage rate the FAA uses to assess quality of the program?

A: Section 147.25 requires that a part 147 program maintain a 70% passage rate on all FAA mechanic tests taken by students within 60 days after graduation. For that reason, **any tests taken before the student's graduation will not be included in your program's passage rate calculations**.

That said, § 147.17 requires that part 147 programs ensure students have the knowledge and skills necessary to be prepared to test. For that reason, **testing scores may always be utilized by the agency as a tool for assessing quality of instruction**. For that reason, it is important that the part 147 program have some assurance that the student is prepared to test—even if the student did not take the general coursework at the part 147 program.

To help facilitate that assurance…

Choose Aerospace provides—

- Certificates of completion for each course completed. ATEC does not advise that a part 147 program provide full credit for the general curriculum unless the student has finished all twelve courses.
- The opportunity for students to test and receive the ATEC industry-recognized credential, further evidencing their knowledge of the FAA general knowledge elements.

Prudent part 147 schools would further assess the student's knowledge and/or high school program before recommending the student for early general knowledge testing.

Q: How is a part 147 program supposed to give credit for the generals if the student hasn't done a hands-on project for every skill element?

A: All skill elements are covered in the computer-based curriculum.

Around 1/3 of those skill elements are ALSO covered by a hands-on project (with more on the way).

Is there a gap? How do we access the gap? And if there is a gap, how do we address it?

Assessing and addressing skill gap.

Knowledge elements are covered through the ATEC credential. Skill elements are covered through simulation and, in some cases, hands-on labs.

Ways to confirm skill—

- Entrance exams
- Adjustment of curriculum to ensure targeted skill elements are covered in airframe & powerplant
- Partner with high school program to cover labs requiring more equipment and materials at the part 147 school

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Questions?

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