

# Nuts, Bolts, and Electrons

## So, You Want to be an Aircraft Mechanic?

### *Learn What It Takes to Become an Aircraft Maintenance Professional*

People with a passion for aviation can appreciate how addictive it can be. If you are one of those bitten by the aviation bug, you may find yourself studying an aircraft in flight and imagining how satisfying it would be to defy gravity at its controls. But, under the sleek, polished exterior cruising around the skies lies its heart: the mechanical system that is as dependent on the technicians who service and repair it as it is on the pilots who operate it. Mastering this complex system is an art as old as the Wright Flyer.

Whether you are a pilot with a penchant to go beyond the 32 preventive maintenance items allowed by regulation or someone whose goal is to be dedicated to practicing and advancing the science of aviation maintenance, it is important to know your options and requirements when considering becoming an FAA certificated aircraft mechanic.

#### The Basics

You may be familiar with the two basic components of an aircraft mechanic certificate: the airframe rating and the powerplant rating (A&P). Each part affords the holder a specific set of privileges and limitations. What might surprise you is that it takes a minimum of 1,900 hours of training to be eligible for a mechanic certificate with A&P ratings. Many A&P candidates go beyond that number, which is significantly greater than the 40 flight hours required for a private pilot certificate and which even eclipses the number of hours required for an airline transport pilot (ATP) certificate.

For a mechanic certificate with A&P ratings, the FAA also requires you to pass not one, not two, but *three* separate written, oral, and practical exams. These include one set for each airframe and powerplant rating and another set for general knowledge tests. You can choose to obtain a single airframe or powerplant rating; however most mechanics elect to have both ratings so they are free to work on either engine or airframe components. See Title 14 Code of Federal Regulations (14 CFR) part 65.71 for more on A&P rating eligibility requirements.

Although mechanics can earn A&P certification through a time-based experience requirement (18 months for a single rating or 30 months of concurrent experience for both), the most popular option is to graduate from a certificated part 147 Aviation Maintenance Technician (AMT) school. These schools, which are individually certificated as air agencies, are held to a strict set of standards outlined in their namesake—14 CFR part 147—that define everything from training materials and shop equipment to attendance and record-keeping. Currently there are 168 active part 147 schools in the United States that offer training in a variety of formats, including two- or four-year college degree programs or in a more concentrated 12- to 18-month format. A growing number of AMT schools have also become affiliated with high schools, offering teens a chance to get an early jump on their aviation careers.

The largest of its kind among high school part 147 programs is New York City's Aviation High School, which enrolls more than 2,000 students a year. Celebrating its 75<sup>th</sup> anniversary in June 2011, Aviation High School boasts having graduated more than 10 percent of all currently certificated aircraft mechanics.

"We offer our students a world-class training environment," says Aviation High School Assistant Principal Mario Cotumaccio, who contends that more innovative thinking is required among today's mechanics to keep pace with advancing aviation technologies. "Youngsters entering this field must understand that what was once a skill learned at a trade school has become a fast-paced career with exciting new potential."

Helping to embrace changes brought on by this paradigm shift in the maintenance community, AMT schools, such as Aviation High School and others, now incorporate more cutting-edge equipment and training aids in the classrooms. They

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**Students at New York City's Aviation High School perform a variety of maintenance tasks in preparation for an A&P certificate.**

also provide access to internship programs that give students a chance to work in a real-world aviation maintenance environment.

### Helping “Maintain” Success

In recent years, many industries have felt the pinch from a struggling global economy and the aircraft maintenance training industry is no exception. The number of A&P certificates issued by the FAA each year, which was 8,444 in 2005, has since declined more than six percent and has hovered around 7,900 over the last few years. Despite the challenges and unpredictable nature of the aircraft maintenance training industry, one constant for part 147 schools has been the supportive presence of the Aviation Technician Education Council (ATEC). Formed in 1961, ATEC’s mission is to help part 147 schools meet their goal of producing qualified and capable mechanics. This responsibility includes advocating for AMT schools in the areas of curriculum improvement, technical and financial support, and promoting mutually beneficial relationships with government and industry groups.

“The landscape for aviation maintenance training has transitioned a great deal,” says ATEC Government Relations Chair Andrew Smith, “that’s why it’s critical we remain actively engaged and committed to supporting the needs of 147 schools.

#### What is a Repairman Certificate?

Another option for the mechanically-minded is a repairman certificate. This certificate has less restrictive eligibility requirements, but has a much more narrow scope of privileges. Certificated repairmen can only perform maintenance within the scope of their training and specific job duties and be authorized to work under the employment of the repair station (or air carrier) through which they received certification. This means that your repairman certificate is not portable to different employers. One new development for repairmen came with the light-sport aircraft rule, which established a light-sport repairman certificate with two ratings: inspection and maintenance. For more information on repairman certificates, see 14 CFR part 65, subpart E.

They represent the foundation and the future of a healthy aviation maintenance industry.”

ATEC has been actively involved with the FAA’s Aviation Rulemaking Advisory Committee (ARAC), which was designed to review and recommend revisions to the 14 CFR part 147 training curriculum and operating requirements and received a record-number of recommendations. While the ARAC’s recommendations are on hold as the FAA is attending to other safety-related rulemaking projects, the agency, according to FAA Airworthiness Safety Inspector and ARAC-member Ed Hall, will continue to pursue the ARAC’s recommendations and provide updates on when the FAA will resume part 147 rulemaking.

### Keeping the Blade Sharp

So, if you have the “aviation bug” and your idea of aviating is more in tune with using a multimeter and torque wrench than a headset and sectionals, perhaps aircraft maintenance training is for you. While the aviation maintenance industry is at a crossroads, the industry will no doubt continue to grow and evolve, especially with the rapid introduction of new technologies. But one thing that will not change is a need for quality training and education, which you are sure to find at an AMT school near you. Remember that aircraft maintenance training can also be a springboard for other career options, such as IA (Inspection Authorization), director of maintenance (DOM), aerospace engineer, or chief inspector. The sky is the limit, so what are you waiting for?

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#### For More Information

**Aviation Technician Education Council (ATEC) Web site**  
<http://www.atec-amt.org/>

**FAA search tool for part 147 AMT schools**  
<http://av-info.faa.gov/MaintenanceSchool.asp>

**Basic Requirements to Become an Aircraft Mechanic**  
[www.faa.gov/mechanics/become/basic/](http://www.faa.gov/mechanics/become/basic/)