

AVIATION MAINTENANCE TECHNOLOGY NYS



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of aviation maintenance technology.

ELIGIBILITY

Open to active SkillsUSA members enrolled in programs with aviation maintenance technology as the occupational objective.

CLOTHING REQUIREMENT

White crew neck short-sleeved T-shirt, work pants, safety glasses or goggles, leather or steel-toed work shoes. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.)

Note: Contestants must wear their official contest clothing to the contest orientation meeting. Also bring #2 pencil, resume, and safety assurance form.

EQUIPMENT AND MATERIALS

- Supplied by the NYS chair/committee:
 - All necessary tools and equipment for the contest
 - All necessary information and furnishings for judges and technical committees
- Supplied by the contestant:
 - Calculator (non-programmable)
 - All competitors must create a one-page résumé using a word processor. Resume to be handed in at the orientation meeting.
 - Note:** Your contest may also require a hard copy of your résumé as part of the actual contest. Check the Contest Guidelines and/or the updates page on the NYS SkillsUSA Web site:
<http://www.nysskillsusa.org/>
 - Ear plugs
 - Safety Glasses

SCOPE OF THE CONTEST

The contest will be consistent with the airframe and power plant mechanics certification guide published by the Department of Transportation Federal Aviation Administration Advisory Circular EA-AC 65-2D [Amdt. 147-2, 35 FR 5535, April 3, 1970, as amended by Amdt. 147-5, 57 FR 28960, June 29, 1992] and Sec. 6(c), Dept. of Transportation Act; 49 U.S.C. 1655(c) [Amdt. 147-2, 35 FR 5535, April 3, 1970, as amended by Amdt. 147-5, 57 FR 28961, June 29, 1992].

The high school contest will cover the competencies classified as general aviation by the FAA.

Knowledge Performance

The contest will include a written knowledge test assessing general knowledge of aviation maintenance technology. Definitions, knowledge, processes and procedures relevant to aviation maintenance technology will be assessed.

Skill Performance

The contest will include a series of operations. A total of eight to 15 operations will be assigned; each operation must be broken down into specific criteria and points assigned based on the difficulty of the task.

Contest Guidelines

- Tasks assigned to a contestant will not have a set time limit or sequence.
- The following shop safety rules will be followed:
 - Safety glasses must be used
 - No loose clothing is permitted
 - Long hair must be tied behind the head and netted or worn under a cap
 - No jewelry will be allowed

Standards and Competencies (High School Contest)

AMT 1.0 — Apply knowledge of basic aviation electricity to FAA general aviation competencies

- 1.1 Calculate and measure capacitance and inductance
- 1.2 Calculate and measure electrical power

1.3 Measure voltage, current resistance and continuity

1.4 Determine the relationship of voltage, current and resistance in electrical circuits

1.5 Read and interpret aircraft electrical circuit diagrams including solid state devices and logic functions.

1.6 Inspect and service batteries

AMT 2.0 — Interpret aircraft drawings to FAA general aviation competencies

2.1 Use aircraft drawings, symbols and system schematics

2.2 Draw sketches of repairs and alterations

2.3 Use blueprint information

2.4 Use graphs and charts

AMT 3.0 — Use weight and balance knowledge to FAA general aviation competencies

3.1 Weigh aircraft

3.2 Perform complete weight-and-balance check and record data

AMT 4.0 — Demonstrate the ability to install fluid lines/fittings to FAA general aviation competencies

4.1 Fabricate and install rigid and flexible fluid lines and fittings

AMT 5.0 — Demonstrate a knowledge of materials and processes to FAA general aviation competencies

5.1 Identify and select appropriate nondestructive testing methods

5.2 Perform dye penetrant, eddy current, ultrasonic and magnetic particle inspections

5.3 Perform basic heat-treating processes

5.4 Identify and select aircraft hardware and materials

5.5 Inspect and check welds

5.6 Perform precision measurements

AMT 6.0 — Demonstrate knowledge of ground operation and servicing to FAA general aviation competencies

6.1 Start, ground operate, move, service and secure aircraft and identify typical ground operation hazards

6.2 Identify and select fuels

6.3 Identify hydraulic and landing gear servicing.

AMT 7.0 — Demonstrate knowledge of cleaning and corrosion control to FAA general aviation competencies

7.1 Identify and select cleaning materials

7.2 Inspect, identify, remove and treat aircraft corrosion and perform aircraft cleaning

AMT 8.0 — Demonstrate knowledge of mathematics to FAA general aviation competencies

8.1 Extract roots and raise numbers to a given power

8.2 Determine areas and volumes of various geometrical shapes

8.3 Solve ratio, proportion and percentage problem

8.4 Perform algebraic operations involving addition, subtraction, multiplication and division of positive and negative numbers

AMT 9.0 — Use maintenance forms and records to FAA general aviation competencies

9.1 Write descriptions of work performed including aircraft discrepancies and corrective actions using typical aircraft maintenance records

9.2 Complete required maintenance forms, records and inspection reports

AMT 10.0 — Recall knowledge of basic physics to FAA general aviation competencies

10.1 Use and understand the principles of simple machines; sound, fluid and heat dynamics; basic aerodynamics; aircraft structures; and theory of flight

AMT 11.0 — Use maintenance publications to FAA general aviation competencies

11.1 Demonstrate ability to read, comprehend and apply information contained in FAA and manufacturers' aircraft maintenance specifications, data sheets, manuals, publications and related federal guidelines

11.2 Use aviation regulations, airworthiness directives and advisory material

11.3 Read technical data

AMT 12.0 — Explain mechanic privileges and limitations to FAA general aviation competencies

12.1 Exercise mechanic privileges within the limitations prescribed by part 65 of this chapter

AMT 13.0 — Demonstrate knowledge of job-related safety requirements to FAA general aviation competencies

- 13.1 Demonstrate proper application of job site and shop rules and regulations (OSHA)
- 13.2 Demonstrate correct selection and use of electrical and hand tools
- 13.3 Demonstrate proper techniques and practices for working on and around live equipment