ATEC ANNUAL CONFERENCE

Revolutionizing the Future of Aviation Maintenance Navigating the Complexities of a New Ecosystem for Aviation Mechanics

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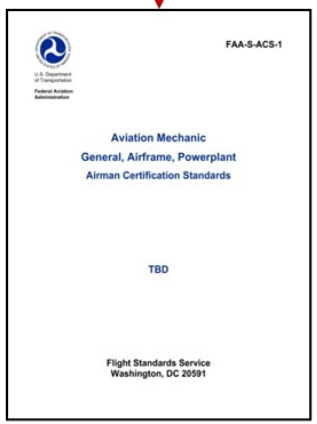
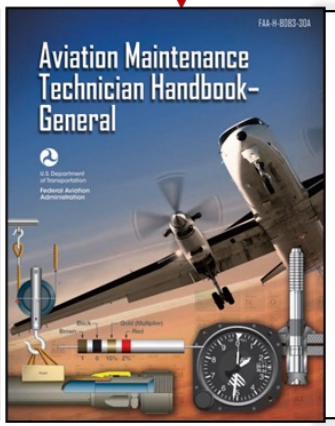
What is ACS?

Purpose + Process + People = Product

Airman Certification System

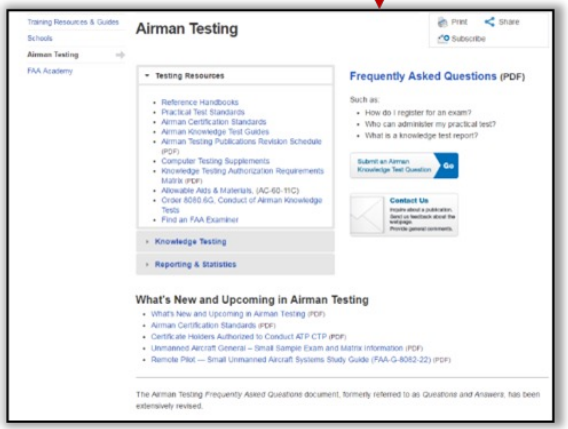
Changes: Regulations, Policies, Procedures, Feedback





Knowledge exam questions are meaningful, relevant, aligned with standards and guidance.

Oral and practical tests are more focused and more efficient.



ACS codes enable continuous alignment

Standards

Combined certification standards for knowledge, risk management, and skill

Guidance

Rules, H-series handbooks, Advisory Circulars, other FAA information sources

Testing

Knowledge exam, oral and practical tests for issuance of certificate or rating

Change Management

Awareness, Desire, Knowledge, Ability, Reinforcement via disciplined change management plan with associated communications strategy

Alignment as appropriate with other Certificates / Ratings


FAA-S-ACS-1
U.S. Department of Transportation
Federal Aviation Administration
Aviation Mechanic
General, Airframe, and Powerplant
Airman Certification Standards
November 1, 2021
The Administrator of the Federal Aviation Administration signed the interim final rule "Part 147, Aviation Maintenance Technician Schools" on March 9, 2022. The interim final rule incorporates this version of the Aviation Mechanic General, Airframe, and Powerplant Airman Certification Standards (FAA-S-ACS-1) by reference. For identification and document-control purposes, this ACS is dated November 1, 2021. However, this ACS is not enforceable until the effective date of the interim final rule. Upon publication, the interim final rule can be found on the Federal Register's website, www.federalregister.gov, and will direct the effective date of compliance with this ACS.
Flight Standards Service
Washington, DC 20591

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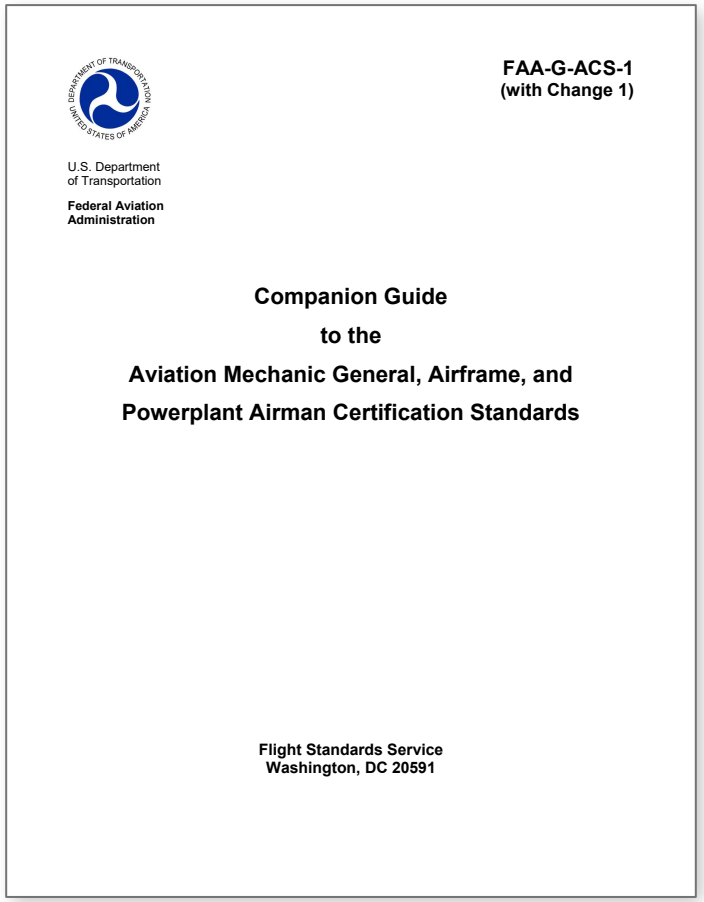
FAA-G-ACS-1
(with Change 1)
U.S. Department of Transportation
Federal Aviation Administration
Companion Guide
to the
Aviation Mechanic General, Airframe, and
Powerplant Airman Certification Standards
Flight Standards Service
Washington, DC 20591

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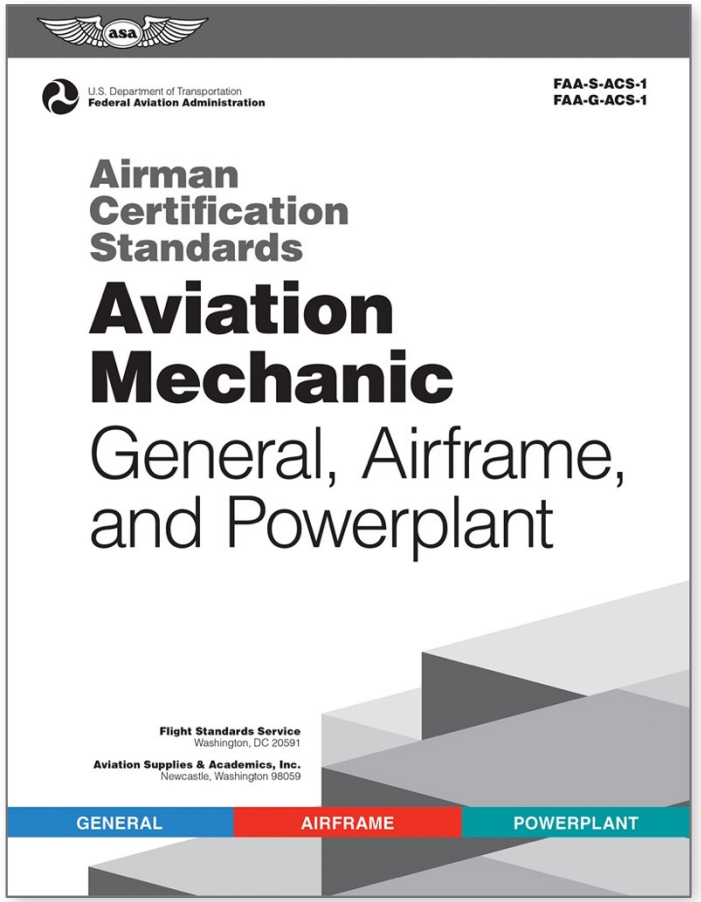
U.S. Department of Transportation
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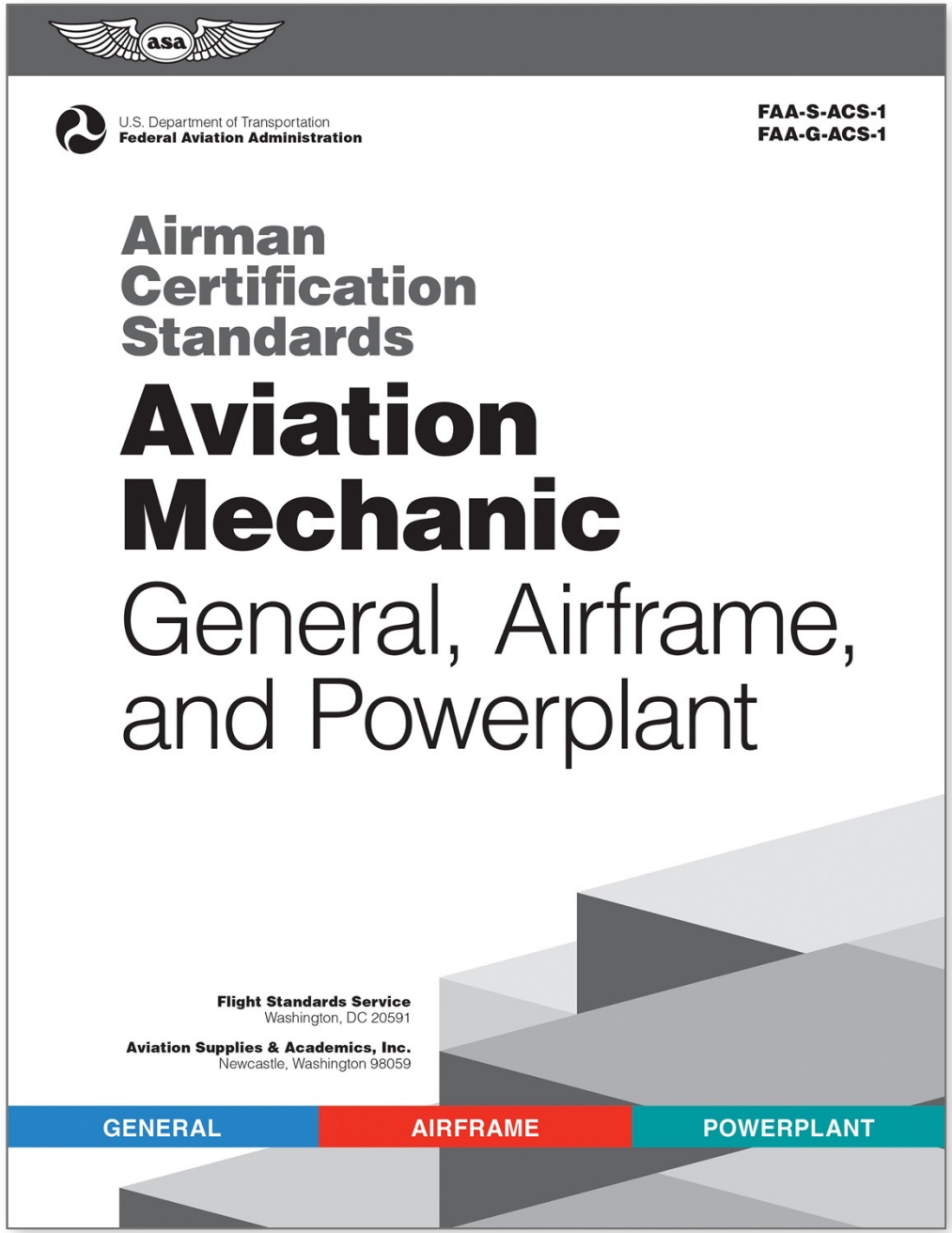
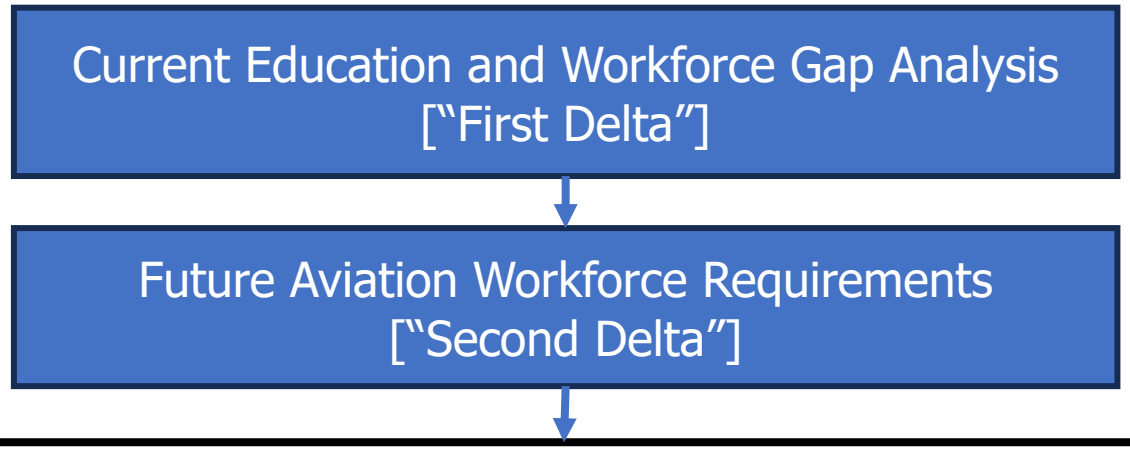
Aviation Supplies & Academics, Inc.
Newcastle, Washington 98059
GENERAL
AIRFRAME
POWERPLANT



I. General	Subject J. Physics for Aviation
References	*AC 43.13-1; FAA-H-8083-30*
Objective	*The following knowledge, risk management, and skill elements are required for aviation physics.*
Knowledge	*The applicant demonstrates understanding of:*
AM.I.J.K1	Matter and energy.
AM.I.J.K2	Work, power, force, and motion.
AM.I.J.K3	Simple machines and mechanics.
AM.I.J.K4	Heat and pressure.
AM.I.J.K5	Bernoulli's Principle.
AM.I.J.K6	Newton's Law of Motion.
AM.I.J.K7	Gas law and fluid mechanics.
AM.I.J.K8	Theory of flight (aerodynamics).
AM.I.J.K9	Standard atmosphere and factors affecting atmospheric conditions.
AM.I.J.K10	Primary and secondary aircraft flight controls.
AM.I.J.K11	Additional aerodynamic devices, including vortex generators, wing fences, and stall strips.
AM.I.J.K12	Relationship between temperature, density, weight, and volume.
AM.I.J.K13	Force, area, or pressure in a specific application.
Risk Management	*The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:*
AM.I.J.R1	Changes in aircraft and engine performance due to density altitude.
AM.I.J.R2	Effect a repair can have on a flight surface.
AM.I.J.R3	Use of performance/testing data.
AM.I.J.R4	Use of related units of measure (e.g., Celsius vs. Fahrenheit).
Skills	*The applicant demonstrates the ability to:*
AM.I.J.S1	Convert temperature units (e.g., from Celsius to Fahrenheit).
AM.I.J.S2	Determine density altitude.
AM.I.J.S3	Determine pressure altitude.
AM.I.J.S4	Calculate force, area, or pressure in a specific application.
AM.I.J.S5	Demonstrate the mechanical advantage of various types of levers.
AM.I.J.S6	Design an inclined plane on paper, indicating the mechanical advantage.
AM.I.J.S7	Identify changes in pressure and velocity as a fluid passes through a venturi.
AM.I.J.S8	Calculate horsepower.

Goals

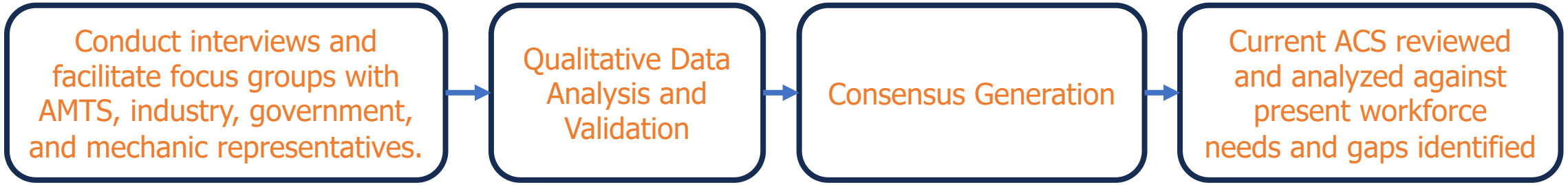
- Ensure the FAA mechanic airman certification standards reflect the skill and knowledge required to meet the demands of the evolving aerospace landscape.



Working with industry stakeholders and industry-backed standards developers, the project team will start with the current ACS, layer on the competencies identified in the First Delta, and identify knowledge and skill required to support and maintain future aircraft designs which will provide the basis for the Second Delta.

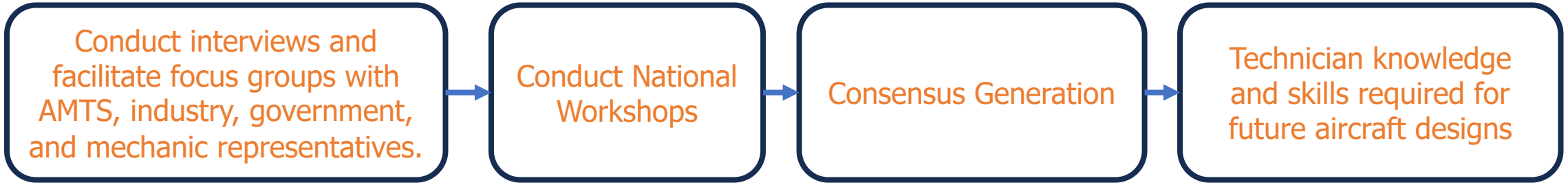
Objective 1: Current Education and Workforce Gap Analysis ["First Delta"]

- Identify gaps in the ACS compared to competencies *currently* required for certificated mechanics.



Objective 2: Future Aviation Workforce Requirements ["Second Delta"]

- Analyze the landscape, identify new trends, technologies, knowledge, and skill necessary for these advancements.



Discussion

Which areas of the current ACS need **revision or removal** to better reflect the most important knowledge and skills needed for today's aircraft?

Discussion

In your opinion, which competencies **NOT** currently addressed in the ACS are critical for mechanics today?

Examples: avionics, propulsion systems, composites…

Discussion

How do you **foresee the role of the aviation mechanic evolving** with the advance of technology in the next 5-10 years?

Discussion

What are the **most significant** technological challenges in aviation maintenance today?

Provide your feedback: Take the survey

https://tinyurl.com/ACSAMT

Objective 3: Building a Coordination Network

- Identify and engage key stakeholders
  - repair stations
  - business aviation
  - operators
  - general aviation
  - manufacturers
  - regulatory bodies (FAA)
  - educational institutions
  - technology providers
- Consider opportunities for international collaboration to share best practices and innovations in aviation technology and maintenance.

Next Steps

- Interviews
  - Interview and gather insights from AMTS, industry employers, ASTM International, & FAA stakeholders
- Workshops
  - Hold 3 workshops to discuss findings & shape future directions

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Questions?

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