

FOUNDED 1961



AVIATION TECHNICIAN EDUCATION COUNCIL

OUR MISSION

To promote & support aviation maintenance technician education,
with the ultimate goal of enabling the aerospace community to meet its workforce needs.

About ATEC



- Mission: To promote and support aviation technician education
- Membership roster includes schools, industry groups, and aviation employers
- Core membership is aviation maintenance technician schools certificated under part 147 (85% of all certificated schools are members of ATEC)

What is the ACS?



- The FAA certification standard that defines the knowledge, risk management, and skill requirements for certificated mechanics.
- Incorporated by reference in 14 CFR part 65 and part 147, making it regulatory and subject to rulemaking for revision.
- Part 147 schools must align their curriculum with the ACS, meaning it functions as a training standard.
- The FAA also aligns knowledge, oral, and practical testing to the ACS, making it the foundation for mechanic certification testing.

Know

Consider

Do

II. Airframe	
Subject L. Ice and Rain Control Systems	
Objective	<i>The following knowledge, risk management, and skill elements are required for aircraft ice and rain control systems.</i>
Knowledge	<i>The applicant demonstrates understanding of:</i>
AM.II.L.K1	Aircraft icing causes/effects.
AM.II.L.K2	Ice detection systems.
AM.II.L.K3	Aircraft and powerplant anti-ice systems and components.
AM.II.L.K4	De-ice systems and components.
AM.II.L.K5	Wiper blade, chemical, and pneumatic bleed air rain control systems.
AM.II.L.K6	Anti-icing and de-icing system maintenance.
AM.II.L.K7	Environmental conditions that degrade vision.
Risk Management	<i>The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:</i>
AM.II.L.R1	System testing or maintenance.
AM.II.L.R2	Storage and handling of deicing fluids.
AM.II.L.B3	Selection and use of cleaning materials for heated windshields.
Skills	<i>The applicant demonstrates the ability to:</i>
AM.II.L.S1	Inspect and operationally check pitot-static anti-ice system.
AM.II.L.S2	Inspect and operationally check deicer boot.
AM.II.L.S3	Clean a pneumatic deicer boot.
AM.II.L.S4	Troubleshoot an electrically-heated pitot system.
AM.II.L.S5	Inspect thermal anti-ice systems.
AM.II.L.S6	Inspect and operationally check an electrically-heated windshield.
AM.II.L.S7	Locate and explain the procedures for inspecting an electrically-operated windshield wiper system.
AM.II.L.S8	Locate and explain the procedures for replacing blades on a windshield wiper system.
AM.II.L.S9	Locate and explain the procedures for inspecting a pneumatic rain removal system.

History



- Developed over a five-year period by the FAA-Industry ACS Working Group
- Originally published in March 2022 alongside the new part 147
- Created from a combination of the legacy Practical Test Standards (PTS) and the previous part 147 curriculum requirements
- Intended to be reviewed and revised regularly to keep pace with evolving industry needs

ACS Working Groups



- FAA working group was “decommissioned” in summer 2025
- ATEC working group created to continue work on ACS rev 01
- Built upon Airlines for America formal ACS revision recommendation submitted to the FAA in November 2024
- ATEC working group made up of representatives of part 147 programs, industry, fellow trade associations, and DMEs



The Current Objective

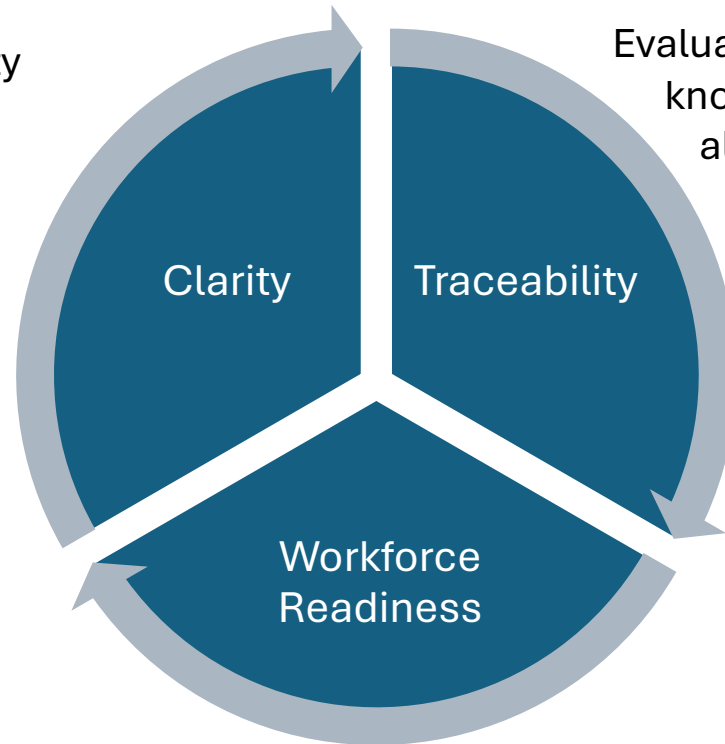
- Finalize ACS Rev 01 recommendation to FAA this summer
- Socialize and secure broad industry support of recommendation
- Recommendations for FAA handbook alignment

Our Vision: Clarity, Traceability, and Workforce Readiness



Regulatory Clarity - Reduce ambiguity in 14 CFR Part 65 expectations for applicants and evaluators across all certification levels

Consistency Across Ratings – Harmonize General, Airframe, and Powerplant ACS into a unified structural framework that evaluators and instructors can rely on



Evaluator Confidence - Provide clearer knowledge, skill, and risk alignment – clearer risk management, added skill performance criteria, and more visible performance standards to support examiner discretion during practical test administration

Align standards with modern aviation maintenance practices – ATA codes for system logic, updating supporting knowledge elements to meet industry advancements – composites, digital electronics, and troubleshooting concepts within a competency-based training framework.

Competency-Based Training and Assessment

K Knowledge

+

S Skill

+

R Risk

=

ACS Task Competency



K

KNOWLEDGE

Conceptual Understanding

Applicant must demonstrate understanding of underlying concepts, regulations, and principles for each task. Evaluated through oral questioning and written assessment.

14 CFR REGS

PRINCIPLES

THEORY



S

SKILL

Observable Performance

Observable, measurable performance of the task to an acceptable standard under evaluator observation. Must meet or exceed the criteria defined in the ACS task element.

HANDS-ON

MEASURABLE

STANDARDS



R

RISK

Hazard Identification

Applicant identifies hazards, assesses risk, and applies mitigations specific to the maintenance task context. Risk management is now a clearer evaluative element.

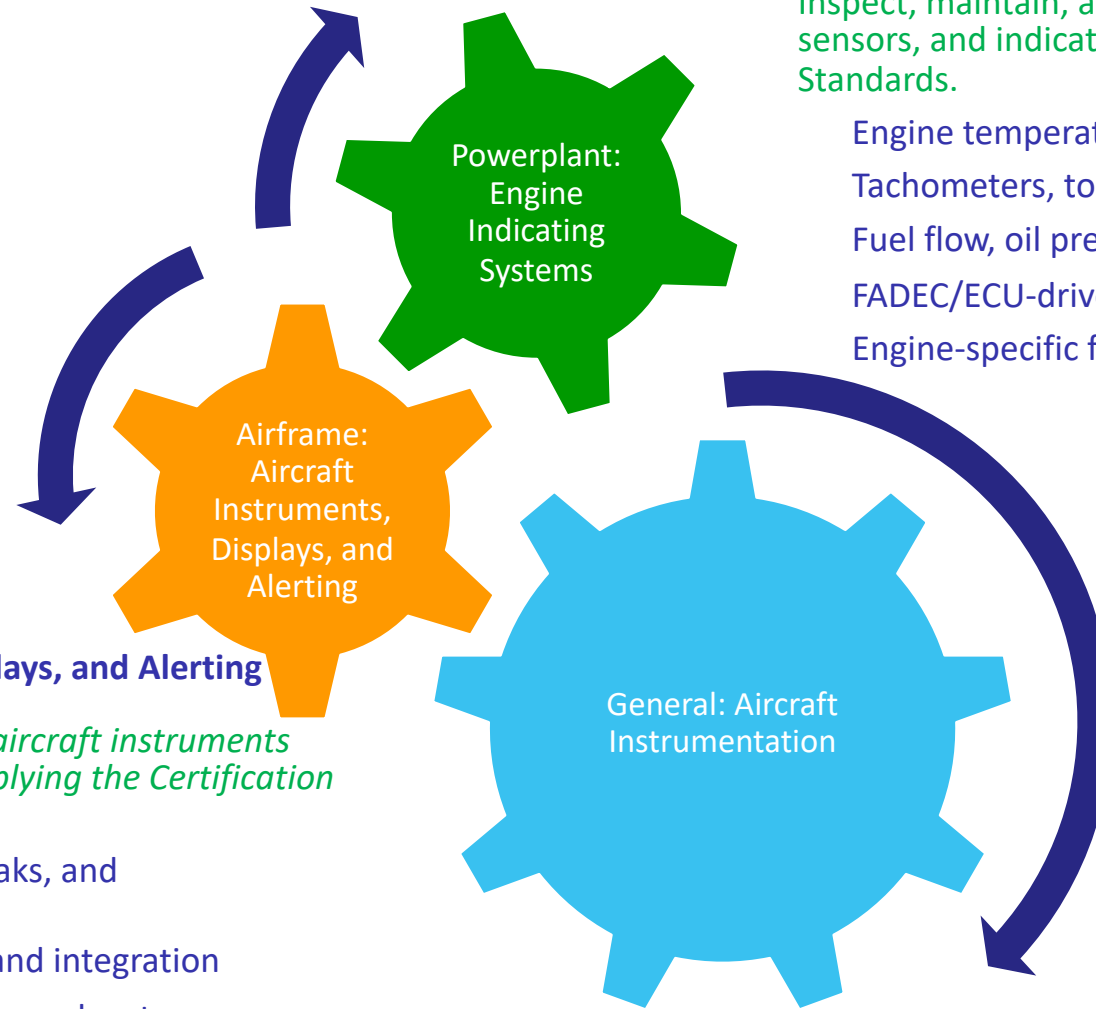
HAZARDS

ASSESSMENT

MITIGATION

Knowledge, Skill, and Risk — Now unified across every task element

Scaffolding Across General → Airframe → Powerplant



Powerplant: Engine Indicating Systems

Inspect, maintain, and troubleshoot engine instrument systems, sensors, and indications, applying the Certification Performance Standards.

- Engine temperature/pressure sensing
- Tachometers, torque, EPR, N1/N2
- Fuel flow, oil pressure/temp, vibration monitoring
- FADEC/ECU-driven indication logic
- Engine-specific failure indications and protective alerts

General: Aircraft Instrumentation

Explain aircraft instrumentation systems by describing how instruments sense, process, and display information and how maintenance practices and configuration controls affect accuracy, reliability, and overall system performance.

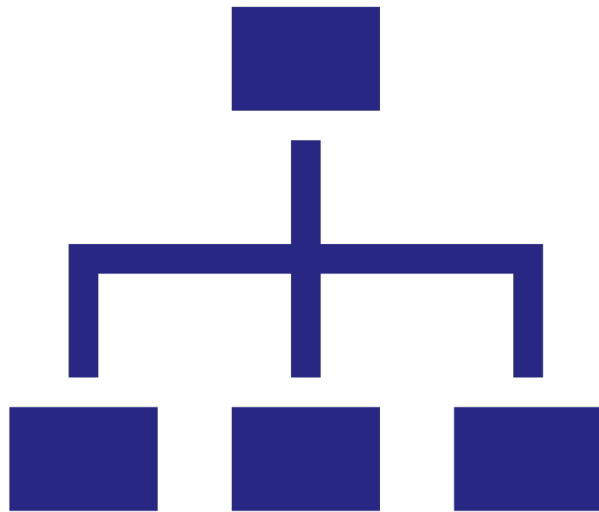
- General principles of operation
- Types and power sources
- Basic display concepts
- Care and handling
- Basic maintenance concepts

Airframe: Aircraft Instruments, Displays, and Alerting

Inspect, maintain, and troubleshoot aircraft instruments and alerting and display systems, applying the Certification Performance Standards.

- Pitot-static system installation, leaks, and troubleshooting
- Flight displays, alerting systems, and integration
- Airframe-level risks, failure modes, and system interactions

Subjects Reordered



Revised into a structured pedagogical (learning and system-aligned)

Why this matters

Reduces cognitive load

Mirrors how technicians learn and work

Supports consistent national training

Subject-Level Reordered - General



	Proposed Order	Current Order	Subject Title
Cognitive Foundations	1.	New	Competency Domains for Aircraft Mechanics
	2.	H.	Mathematics
	3.	J.	Physics for Aviation
Tools & Materials	4.	New	Hand Tools and Measuring Devices
	5.	E.	Aircraft Materials, Hardware, and Processes
	6.	D.	Fluid Lines and Fittings
Systems Literacy	7.	A.	Electrical Principles and Practices
	8.	New	Aircraft Instrumentation
	9.	B.	Aircraft Drawings
Operational Readiness	10.	C.	Weight and Balance
	11.	F.	Safety, Ground Operations and Servicing
	12.	G.	Cleaning and Corrosion Control
Human Performance & Regulatory Foundations	13.	L.	Human Factors
	14.	I.	Regulations, Maintenance Forms, Records, and Publications
	15.	K.	Inspection and Troubleshooting Concepts and Techniques

Subject-Level Reordered - Airframe



	Proposed Order	Current Order	Subject Title
Structures	1.	A.	Metallic Structures
	2.	B.	Non-Metallic Structures
	3.	New	Aircraft Painting and Finishing
	4.	New	Windows
Mechanical	5.	C.	Flight Controls
	6.	E.	Landing Gear Systems
Fluid Power	7.	F.	Hydraulic Systems
	8.	New	Pneumatic Systems
	9.	J.	Aircraft Fuel Systems
Environmental / Protection	10.	O.	Water and Waste
	11.	G.	Air Conditioning
	12.	L.	Ice and Rain Control Systems
	13.	M.	Airframe Fire Protection Systems
	14.	New	Oxygen Systems
Electrical / Avionics	15.	K.	Aircraft Electrical Systems
	16.	H.	Flight Instruments, Displays, and Alerting Systems
	17.	I.	Communication Systems
	18.	New	Navigation Systems
Specialized	19.	N.	Rotorcraft Systems
	--	D.	Airframe Inspection

Subject-Level Reordered - Powerplant



	Proposed Order	Current Order	Subject Title
Engine Types with their specific support systems	1.	A.	Reciprocating Engines 1. Core Knowledge and Skills 2. Induction & Fuel Metering Systems 3. Cooling Systems 4. Exhaust Systems
	2.	B.	Turbine Engines 1. Core Knowledge & Skills 2. Air Systems 3. Fuel & Fuel Metering 4. Exhaust & Reverser Systems
Support Systems	4.	G.	Engine Lubrication Systems
	6.	F.	Engine Electrical Systems
	5.	H.	Ignition & Starting Systems
Indication	7.	D.	Engine Instruments
Protection	8.	E.	Engine Fire Protection Systems
Propellers	3.	M.	Propellers
	--	I, J, K, and L	Engine Fuel & Fuel Metering, Reciprocating Engine Induction and Cooling Systems, Turbine Engine Air Systems, and Engine Exhaust and Reverser Systems
	--	C.	Engine Inspection

Knowledge, Risk, Skill Alignment



I. GENERAL	
SUBJECT: B. AIRCRAFT WEIGHT & BALANCE	
COMPETENCY	Demonstrates the ability to apply weight and balance principles by determining aircraft weight, center of gravity, and required corrections using approved data, safe practices, and regulatory standards to ensure stability, controllability, and structural integrity.

KNOWLEDGE ID #	KNOWLEDGE [OBSERVABLE BEHAVIORS]	BLOOM'S LEVEL	SKILL ID #	SKILLS [TASK DEMONSTRATIONS]	SKILL GAP ANALYSIS	RISK ID #	RISKS	RISK GAP ANALYSIS
WB.K.001	Define standard weight and balance terminology.	Remember	—	(No direct skill task)	✗ Knowledge-only outcome	WB.R.003 WB.R.004	CG out-of-limits effects; Excess weight effects	✓ Terminology supports correct interpretation of limits and effects.
WB.K.002	Describe the purpose of weight and balance and factors that influence it.	Understand	—	(No direct skill task)	✗ Knowledge-only outcome	WB.R.003 WB.R.004	CG and weight-related aerodynamic/structural risks	✓ Conceptual understanding mitigates misloading risks.
WB.K.003	Perform aircraft weighing procedures using approved methods and safety practices.	Apply	WB.S.001	Perform aircraft weighing procedures using manufacturer instructions.	✓ Direct skill alignment	WB.R.001 WB.R.002 WB.R.003	Improper lifting; unsafe weighing; incorrect scale setup	✓ Strong alignment — weighing procedures directly mitigate these risks.
WB.K.004	Calculate arms, moments, moment indexes, and CG.	Apply	WB.S.003	Perform weight and balance calculations for a given aircraft.	✓ Strong skill alignment	WB.R.003 WB.R.004	CG out-of-limits; excess weight effects	✓ Direct mitigation — correct calculations prevent out-of-limits conditions.

Introducing Competency Domains

PROVIDE A UNIFYING INTERPRETIVE FRAMEWORK ACROSS ALL ACS SUBJECTS AND REINFORCE THE BEHAVIORS IDENTIFIED AS ESSENTIAL FOR TECHNICAL PERSONNEL:

- Technical Task Performance
- Troubleshooting & Technical Decision-Making
- Safety & Risk Management in Maintenance
- Human Factors & Situational Awareness
- Use of Approved Data and Procedures
- Communication & Coordination
- Regulatory and Airworthiness Responsibility
- Professionalism and Ethical Responsibility
- Quality, Error Management, and Continuous Improvement
- Use of Tools, Equipment, and Digital Systems
- Task Planning and Work Management

What you will see in this draft...

- Compiled document – front matter, ACS elements, and appendices
- Front Matter listing a summary of major enhancements being proposed
 - Modernized Structure and Organization
 - Strengthened Regulatory and Technical Alignment
 - Refined Skill Elements for Observability and Testability
 - Enhanced Knowledge Elements for Accuracy and Relevance
 - Improved Risk Management Integration
 - Increased Clarity for Training Providers and DMEs
 - Future-Focused, Industry-Responsive Framework
- ACS elements
 - Enhanced knowledge elements – updated, revised, and consolidated
 - Improved risk management elements – consist format, human factors and system-specific
 - Skills – consist format with observable performance criteria and maintenance specific verbs, audited against MTEL
- Appendices
 - Guidance material moved to revised Companion Guide
 - Performance Standards and Safety combined in Appendix A – clarity and visibility of expectations during Oral & Practical testing
 - Competency Domains for Aviation Mechanics now in Appendix B – Non-testable, context for evaluating Performance Standards

Companion Guide...

- Fully revised Companion Guide
- Expanded sections
 - Chapter 1 - Understanding the ACS
 - Chapter 2 – Using the ACS
 - Focused on the end-users: Applicants, Instructors (AMTS/Training Providers), DMEs, Test writers, and Industry
 - Chapter 3 – Mechanic Testing Process