

A Comprehensive Modernization of Pilot Training Conducted by 14 CFR Part 141 Training Organizations

“Building a predictive, performance-based pilot training system that consistently produces highly capable, safety-focused pilots through use of data, technology, and integrated safety and quality management.”



Prepared for:

The Federal Aviation Administration (FAA)

Submitted by:

The National Flight Training Alliance (NFTA) along with industry representatives and partners present the following:

This report reflects data, input, and perspectives provided by the flight training industry in public meetings conducted from March 2025 through March 2026.

The analysis, organization, and publication of this report has been completed by the National Flight Training Alliance (NFTA) along with industry Subject Matter Experts.

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Preamble

For more than 50 years the fundamental bedrock of flight training performed in the United States of America under 14 CFR part 141 has remained mostly unchanged, reflecting a system designed for an era of aviation that no longer exists.

While there have been incremental efforts to expand or refine this regulatory structure, the fundamental philosophy and methodologies used to train professional aviators have not evolved at a pace consistent with the demands of modern aviation.

Flight training today, particularly over the past 15 years, has experienced monumental growth, with pilot production expanding far beyond what was originally envisioned. It is now imperative that the United States modernize its approach to maintain global leadership in aviation training and technological innovation. This will require a clear and deliberate vision for the future of aviation and the next generation of aviators.

Over the past decade, a strong call for modernization has emerged from both industry leadership and government regulators. Congressional leaders and members of the executive branch have recognized the need to expand our capabilities and improve efficiency within an increasingly resource-constrained environment. Advancing modern training methodologies that maintain the highest standards of quality while streamlining processes is essential.

This report recognizes that in the current fiscal climate industry stands in a unique position to assist government regulators in identifying where efficiencies can be realized and modifying systems to utilize those efficiencies to maximum effect; ensuring the production of pilots is no longer “throttled” or constrained by regulatory inefficiency and system inadequacy.

This report is the result of a full year of engagement, including meetings with industry stakeholders and individual participants from every sector of the training industry, large and small providers alike; conducted from March 2025 to March 2026. From the outset of this initiative, industry leadership and participants reached a consensus on the following key goals for both the modernization report and subsequent efforts:

1. **Incentivize Participation** - Throughout the history of flight training, the United States has maintained a bifurcated system made up of certificated, regulated flight training providers under 14 CFR part 141 and other independent flight training providers operating outside of direct regulatory oversight under FAR part 61. Many flight training providers who elect to remain outside of the part 141 environment do so because of its structural inefficiency and their inability to maintain sufficient throughput impeded primarily by current government structures, mainly, but not exclusively, around oversight and approval. This is inverse to the intended goal and industry agrees participation must be incentivized and made advantageous for flight training providers to operate within this regulatory framework with the overall goal of improving system safety. Removing these impediments may motivate additional providers to work within a new and future-focused system.
2. **Embrace Emerging Technology and Innovation** - Rapid growth and technological innovation in classroom teaching methods, aircraft simulation, and virtual reality systems, among others, are unable to be easily integrated into the current regulatory structure because of constraints and limitations of a more than 50-year-old system. To continue innovating and providing excellence in instruction to the next generation of aviation professionals, a framework must be established that embraces and enables these technological teaching methods. This represents a critical area where the United States can reassert and strengthen its leadership role in the global aviation training environment.
3. **Improve Efficiency** - Removing outdated regulatory requirements and methods that are fundamentally inefficient and unable to keep up with the pace of the modern aviation training environment is of paramount importance to both industry and regulators. Improving efficiency in industry allows for the production of better-trained pilots while serving customers at a higher level. For regulators, increased efficiency enables more effective oversight, even within constrained resources. New, technologically driven methods will allow future oversight to be conducted more expeditiously and by fewer individuals managing more within a simpler and technologically assisted environment. There is value in this goal for all stakeholders in aviation.
4. **Improve Student Outcomes** - Utilizing improvements in all of these areas, the system must enhance student outcomes and graduate better, more technologically adept and professionally suited pilots for the future of aviation in this country. Through ongoing data-driven analysis of flight training methods and outcomes, the framework will support the

development of a closed-loop, self-improving model of regulatory compliance and training that continually refines itself using real-time data at its core.

5. Enhance & Improve Overall System Safety - Flight training has always been recognized as the “front door” to the aviation system. Improving training processes and the quality of aviators at this level will have a cascading effect on overall system safety; most importantly with the goal of reducing fatal accidents in every aviation sector.
6. Wherever Possible Reducing Costs as a Barrier to Entry - By its nature, aviation and flight training are among the most expensive forms of professional technical training available. Reducing costs as a barrier to entry is essential to widening the pool of applicants and making the profession more accessible and equitable for those who aspire to a career in professional aviation.

For years, our European counterparts have led in the areas of efficiency and technological innovation in flight training and aviation systems. The United States has been constrained by inefficient regulatory schemes and processes that must now be modernized in a manner that restores and clearly demonstrates global leadership. The United States must be capable of defining new methods within a bifurcated system where others do not, and must make clear that, while the structure is fundamentally different, it can develop processes and methods of compliance that meet international standards within this unique two-tiered framework.

“The goal in the modernization of 14 CFR part 141 is to develop a robust certification and regulatory framework that stands alone as the preeminent accreditation and method by which aviators are trained throughout the entire world.

In achieving FAA certification within this new framework, a flight school would possess the highest level of certification available worldwide, negating the need for further accreditation or oversight. They stand alone already!”

EXECUTIVE SUMMARY

A Comprehensive Modernization of Pilot Training Conducted by 14 CFR Part 141 Training Organizations

Prepared for:

The Federal Aviation Administration (FAA)

Submitted by:

The National Flight Training Alliance (NFTA)

In Partnership with Industry Representatives and Subject Matter Experts

March 31, 2026

“Building a predictive, performance-based pilot training system that consistently produces highly capable, safety-focused pilots through use of data, technology, and integrated safety and quality management.”

EXECUTIVE SUMMARY

The National Flight Training Alliance (NFTA), on behalf of the flight training industry of the United States, respectfully presents this report to the Federal Aviation Administration as a comprehensive blueprint for the modernization of pilot training conducted under Title 14 of the Code of Federal Regulations, Part 141. This document represents the consolidated voice of an industry united in its commitment to advancing the safety, quality, and effectiveness of the national pilot training system.

For more than fifty years, the regulatory framework governing certificated flight training in the United States has remained fundamentally unchanged designed for an era of aviation that no longer exists. During this same period, the aviation industry has undergone transformative growth. Pilot production has expanded far beyond original projections, emerging technologies have redefined the training landscape, and the global aviation community has advanced training methodologies that the current U.S. regulatory structure is ill-equipped to accommodate. The imperative to modernize is no longer a matter of preference; it is a matter of national competitiveness, operational safety, and strategic foresight.

This report is the product of a rigorous, year-long engagement conducted from March 2025 through March 2026, encompassing publicly held meetings and structured stakeholder consultations with industry representatives from every sector of the flight training community, large and small providers, universities, independent operators, and subject matter experts alike. The process was transparent, inclusive, and deliberate, reflecting the gravity and national significance of the undertaking.

Guiding Principles

From the outset of this initiative, industry leadership and participants reached consensus on six foundational goals that have guided both the deliberative process and the recommendations contained herein:

Incentivize Participation. Restructure the Part 141 regulatory environment to remove systemic barriers that discourage flight training providers from seeking certification, thereby expanding the number of schools operating within a safety-focused, quality-assured framework.

Embrace Emerging Technology and Innovation. Establish a regulatory structure capable of integrating advanced simulation, extended reality, electronic flight bags, and other technological innovations that the current fifty-year-old framework cannot accommodate.

Improve Efficiency. Eliminate outdated regulatory requirements and administrative processes that impede both industry throughput and government oversight effectiveness, enabling the production of better-trained pilots within a streamlined system.

Improve Student Outcomes. Leverage data-driven analysis and continuous improvement methodologies to produce graduates who are more capable, more safety-conscious, and more professionally prepared for the demands of modern aviation.

Enhance and Improve Overall System Safety. Recognize that flight training is the front door to the aviation system, and that improvements at this foundational level will have a cascading, positive effect on safety across every aviation sector.

Reduce Costs as a Barrier to Entry. Address the economic realities that limit access to professional aviation careers, making the profession more accessible to a broader and more diverse pool of aspiring aviators.

Principal Recommendations

Based on the comprehensive input gathered through this public engagement process, the NFTA and its industry partners recommend that the Federal Aviation Administration initiate an expedited rulemaking calendar to consider and implement the following eight principal recommendations, each supported by detailed rationale and proposed regulatory language contained in the full report:

1. Establish a Central Management Office (CMO)

The FAA should establish a dedicated Central Management Office responsible for all Part 141 pilot school initial certification and ongoing certificate management. This office would ensure uniform application of standards nationwide, modernize record-keeping and compliance tracking as mandated by the FAA Reauthorization Act of 2024, and streamline the initial application and amendment processes through a standardized electronic certification process. The CMO would retain the ability to

delegate inspections to Flight Standards District Offices while maintaining centralized quality and consistency.

2. Implement Safety Management Systems (SMS) and Quality Management Systems (QMS)

In alignment with International Civil Aviation Organization (ICAO) mandates and at the FAA's expressed direction, the industry recommends establishing both Safety Management Systems and Quality Management Systems within the Part 141 training environment. The proposal envisions replacing static, compliance-driven quality control requirements with a performance-based QMS built on continuous evaluation, data-driven oversight, and systematic improvement. A two-tier QMS structure would formally document system design at Tier 1 and require objective evidence of operational effectiveness at Tier 2, with defined privileges contingent upon sustained performance outcomes.

3. Modernize School Management, Oversight, and Documentation

The FAA should fundamentally reform how it manages and oversees certificated pilot schools. Key changes include establishing the Safety Assurance System (SAS) as the central repository for school operational specifications, transitioning from periodic recertification to a currency-based compliance model, increasing the authority of chief instructors, and consolidating required policies, procedures, and documentation into a single Pilot Training Management Manual (PTMM) that incorporates QMS and SMS documentation.

4. Develop Consensus Standards

The FAA should support the development of industry consensus standards as an alternate means of compliance with Part 141 regulations. This approach establishes a system for providing regulatory and policy guidance developed collaboratively by the industry and creates a forward-looking framework that can adapt as the new regulation is implemented and as training methodologies continue to evolve.

5. Reform Examining Authority

Significant reforms are recommended to the Part 141 examining authority framework, including standardized training for chief and check instructors comparable to Designated Pilot Examiners, mandatory recurrent training

within twelve months, and the elimination of static practical exam pass-rate metrics as the sole basis for examining authority qualification. Under the proposed framework, examining authority will be a privilege dependent on the effectiveness of a school's QMS at Tier 2, subject to revocation based on demonstrated performance rather than arbitrary numerical thresholds.

6. Expand Flight Simulation Training Device (FSTD) and Technology Credit and Usage

The industry recommends that the FAA increase credit allowances for various types of flight simulation training devices, formally recognize extended reality (XR) devices for training credit, and establish an Enhanced Advanced Aviation Training Device (EAATD) category. These changes reflect the current state of simulation technology and its demonstrated capability to produce measurable, safety-equivalent training outcomes at reduced cost and increased accessibility.

7. Modernize Training Course Appendices

The report proposes comprehensive additions and amendments to the Part 141 appendices, including new appendices for the Professional Pilot series, the ATP Certification Training Program (ATP-CTP), the Enhanced Qualification Program (EQP), and consensus standard-based courses. Existing appendices would be updated to align with current Airman Certification Standards (ACS), modernize FSTD credit percentages, and incorporate regulatory language enabling future modifications through consensus standards.

8. Replace Provisional Pilot School with Registered Pilot School

The FAA should replace the current provisional pilot school framework with a Registered Pilot School category that provides FAA recognition without full Part 141 certification privileges. This streamlined registration pathway would serve as a preparatory step toward eventual full certification, reducing administrative burden while maintaining oversight and encouraging broader participation in the regulated training environment.

Additional Recommendations

In addition to the eight principal recommendations, this report presents a series of supplemental recommendations that further strengthen the modernization framework:

1. Establish an FAA-sanctioned Mentorship Program pairing seasoned flight schools with new applicants to accelerate Quality Management System and Safety Management System adoption.
2. Encourage curriculum and resource sharing between certificated schools to elevate the quality and consistency of training across the national system.
3. Unify policy and coordination between FAA offices AFS-810 and AFG-940 for commercially developed training syllabi.
4. Standardize Training Course Outline (TCO) design across the industry and authorize digital submission, digital records, and electronic signatures for all Part 141 activities.
5. Establish a National Flight Training Innovation and Research Program, a dedicated FAA–industry–academic initiative modeled after the NextGen ATC testbed to ensure U.S. pilot training remains modern, evidence-based, and globally competitive.
6. Evaluate the addition of an Initial Teaching Experience (ITE) requirement for newly certificated flight instructors, providing structured mentorship during their initial period of dual instruction.
7. Extend the validity of Part 141 graduation certificates from 60 days to 120 days to provide students and schools greater scheduling flexibility.

A Vision for the Future

The recommendations contained in this report are not incremental adjustments to an aging system. They represent a deliberate, comprehensive reimagining of how the United States trains its pilots, one that positions this nation to reclaim and strengthen its role as the global leader in aviation training excellence. For years, European counterparts have advanced in areas of efficiency and technological innovation while the United States has been constrained by regulatory schemes designed for a fundamentally different era. This report charts the course for change.

The goal of this modernization effort is unambiguous: to develop a robust certification and regulatory framework under 14 CFR Part 141 that stands alone as the preeminent accreditation and method by which aviators are trained throughout the world. Under this new framework, achieving FAA certification would represent the highest standard of training excellence available anywhere negating the need for further accreditation or external oversight. The American flight training system would, in this vision, stand alone already.

The National Flight Training Alliance, together with its industry partners, stands ready to support the Federal Aviation Administration in every phase of this modernization effort. This report reflects not merely the recommendations of an industry, but the collective resolve of a profession dedicated to the highest standards of safety, quality, and service to the traveling public and to the national interest. We respectfully urge expeditious consideration and action on these recommendations.

Respectfully submitted on behalf of the National Flight Training Alliance, industry stakeholders, and subject matter experts contributing to the advancement of American aviation training.

March 31, 2026

Background/ Industry Overview/ Current Regulatory Landscape

Purpose:

This document establishes the Modernization of part 141 public meetings. The sponsor of these meetings is the Acting Manager of the General Aviation and Commercial Division. This document outlines the meetings' organization, participant responsibilities, and tasks.

Background:

Title 14 Code of Federal Regulations (14 CFR) part 141 pilot schools prescribes the requirements for issuing pilot school certificates, provisional pilot school certificates, associated ratings, and the general operating rules applicable to a holder of a certificate or rating issued under part 141. Through a part 141 pilot school, a student may obtain equivalent levels of aeronautical experience in fewer hours than required by 14 CFR part 61. Part 141 schools are required to have Federal Aviation Administration (FAA) certification and oversight. Specifically, part 141 includes curricula standards for training and procedures to ensure a training course used by a school is adequate, appropriate, and administered by qualified personnel.

The certification of pilot schools is approaching 100 years of existence. Regulations for pilot schools are typically promulgated to improve safety and embrace changes, such as advances in technology, aircraft accidents, and the need for data collection and analysis. Although the FAA has spot revised certain regulatory requirements pertaining to pilot schools, part 141 still has many foundational ties to Civil Air Regulations (CAR) part 50, which was implemented in the 1940s.

Therefore, part 141 needs to be analyzed to determine how it can evolve with the changing aviation industry. The FAA is asking stakeholders to consider and develop recommendations that would serve the needs of current and future pilot schools, encourage innovation, and provide a robust and safe training environment that instills the necessary knowledge, skills, critical thinking, and aeronautical decision making in its new pilots to reduce the overall accident rate for all facets of aviation. These meetings and any subsequent stakeholder workgroups provide an opportunity for the pilot training industry to present

recommendations that could significantly enhance part 141 for pilot training and certification.

Objective of the Meetings:

The meetings will provide a forum for the aviation training community to discuss, prioritize, and provide recommendations to the FAA concerning part 141 pilot schools.

Tasks of the Meetings:

The tasks of the public meetings are:

- a. Review part 141 and provide recommendations that would support the current and future needs of pilot training. The stakeholders will have the capability to be innovative and original in recommendations for an advanced and modern part 141 that anticipates future needs of part 141 pilot schools.
- b. Identify recommendations related to the requirements to obtain and maintain a part 141 pilot school air agency certificate.
- c. Discuss and provide recommendations for better utilization of examining authority under part 141. Consider how examining authority may be enhanced through eligibility requirements, training of personnel, and FAA oversight.
- d. Discuss, define, and provide recommendations for what a 'modern' pilot training and certification system should model to meet the needs of the pilot training industry.
- e. Discuss and provide recommendations on the integration of emerging technology into a modern part 141 training and certification system. Emerging technology could include but is not limited to, electric propulsion, advanced air mobility, simplified flight controls, advanced simulation (virtual and mixed), electronic flight bag (EFB), electronic record keeping, advanced avionics such as an angle of attack indicator, advanced weather products and delivery, and remote training.
- f. Develop recommendations on teaching, learning, and examination methods (e.g., competency-based, scenario-based, performance-based, and other flexible considerations) that could be better utilized within the part 141 training environment.
- g. Discuss and provide recommendations on how to capture data from part 141 pilot schools to determine the quality of training. As part of this task, consider how the data can be utilized to amend training courses to correct

for identified safety issues or to enhance training. The stakeholders may offer solutions for continuous improvement of pilot training, including by sharing training data with the FAA and others within the training industry to foster a cooperative relationship with the FAA and to support the training industry as a whole.

- h. Determine the challenges part 61 training providers face and the reservations they may have to provide training under part 141. The stakeholders may make recommendations to maximize the full potential of part 141 to meet increased demand for pilot training.
- i. Discuss and provide recommendations to encourage current part 61 training providers to become certificated pilot schools in the more structured part 141 environment, which offers lower flight time requirements for pilot certificates and ratings.
- j. Develop recommendations to create opportunities and/or a program for industry stakeholders to mentor part 61 training providers, with the goal of helping the part 141 training community continue to provide a safe and robust training environment for all students.
- k. Provide recommendations for training and operational requirements that recognize and mitigate risk to promote a safety mindset in part 141 personnel and students to reduce the overall fatal accident rate. Consider the implementation of a safety management system (SMS) within part 141 pilot schools.
- l. Discuss and provide recommendations on incorporating a Quality Assurance System, as outlined in International Civil Aviation Organization (ICAO) Annex 1, Appendix 2, Item 4, into part 141 pilot school requirements.
- m. At the conclusion of this project:
 - i. The Stakeholder Champion should send a recommendation report to the FAA General Aviation and Commercial Division via the Federal Register Docket.
 - ii. The FAA General Aviation and Commercial Division will determine if the recommendations in the report will be utilized in future rulemaking efforts.

PUBLIC MEETING PROCEDURES:

- a. The stakeholders act solely in an advisory capacity by advising and providing written recommendations to the FAA through the Federal Register Docket.

- b. The stakeholders may submit additional recommendations outside the stated scope of the meetings to the FAA through the Federal Register Docket.
- c. At the discretion of the General Aviation and Commercial Division, the stakeholders may reconvene following the submission of the recommendation report for the purpose of providing advice and assistance to the FAA.
- d. In potential future rulemaking efforts, the FAA may use some, all, or none of the recommendations provided through these efforts.

PUBLIC MEETING ORGANIZATION, PARTICIPANTS, AND ADMINISTRATION:

The FAA will organize the public meetings with the pilot training industry. Participation is purely voluntary and is open to any stakeholder with an interest in pilot training conducted under part 141.

PARTICIPATION IS OPEN TO PROMOTE DISCUSSION:

Attendance, active participation, and commitment is essential for achieving the meetings' objectives and tasks. When necessary, the stakeholders may set up specialized and temporary workgroups outside of the FAA sponsored meetings.

Other Federal government agency subject matter experts may be requested to participate as observers and to provide technical support to the stakeholders.

- a. The Sponsor, Acting Manager of the General Aviation and Commercial Division, will designate the FAA representatives who will:
 - 1) Ensure FAA participation and support from all affected lines-of-business to provide technical support to the stakeholders,
 - 2) Notify the participants of the time and place for each meeting, and
 - 3) Receive any status report and recommendations report through the Federal Register Docket.
- b. Once appointed, the Stakeholder Champion should:
 - 1) Coordinate any additional stakeholder meetings (workgroup meetings) to meet the objectives and timelines,
 - 2) Establish and distribute any additional stakeholder meeting agendas (workgroup meetings) in a timely manner,
 - 3) Provide meeting notes, if deemed necessary,
 - 4) Provide status reports, as requested, in writing to the Federal Register Docket and,

- 5) Submit the recommendation report to the FAA through the Federal Register Docket.

PUBLIC PARTICIPATION:

Meetings are open to the public and participation from stakeholders is encouraged.

AVAILABILITY OF RECORDS:

All reports and recommendations generated from these public meetings and subsequent workgroups will be provided to the FAA through the Federal Register Docket.

Recommendations

Based on input gathered during publicly held meetings and stakeholder engagement, the National Flight Training Alliance (NFTA), the industry lead championing stakeholder engagement during this process, along with its industry partners, recommends that the Federal Aviation Administration (FAA) initiate an expedited rulemaking calendar to consider and implement the following recommendations:

1. Establish a Central Management Office (CMO)

The FAA should consider establishing a Central Management Office (CMO) responsible for all 141 pilot school initial certification and certificate management.

a. FAA Central Management Office (CMO)

- i. All inspection and surveillance activities will be managed by a central FAA office, ensuring uniform application of standards nationwide.
- ii. As mandated by the FAA Reauthorization Act of 2024, the FAA should modernize record-keeping and compliance tracking.
- iii. Streamline the initial application and amendment processes
- iv. Create a standardized electronic certification process through the Safety Assurance System (SAS) to replace the current, 8420-8 form.
- v. Improve SAS Training: Provide better training (beyond the "Q card") for new users on the SAS external portal.
- vi. The Initial Certification process should be straightforward and completed in a reasonable window of time. The process should include instructions for how to properly complete all tasks. Tasker suspends time for both parties.
- vii. The Central Management Office (CMO) has the ability to delegate inspections of flight schools to the Flight Standards District Offices (FSDOs) with appropriate instructions for completion. All delegated inspections must be completed within 30 days of the request.

2. Safety Management System (SMS) and Quality Management Systems (QMS)

The FAA should implement a policy for a Safety Management System (SMS) and a Quality Management System (QMS) in the 141 environment.

a. SMS

- i. Currently the FAA has filed a differences with the International Civil Aviation Organization's (ICAO's) Annex 19 which requires Aviation Training Organizations (ATO) to have a Safety Management System (SMS). The FAA should establish Safety Management Systems in the part 141 pilot training environment.
- ii. Recommend the FAA will accept two methods to meet the SMS requirement; part 5 or an alternate SMS requirement developed under part 141.
- iii. Remove 141.38 Airports from the regulations. This regulation is covered by 91.103, and part 139 for airport certification. Also, a schools SMS will outline the minimum operational requirements for their activities.

b. QMS

- i. Currently the FAA has filed a differences with the International Civil Aviation Organization's (ICAO's) Annex 1 which requires Aviation Training Organizations (ATO) to have a Quality Assurance system in place. The FAA should establish Quality Management Systems (QMS) in the part 141 pilot training environment to meet this requirement.
- ii. Replace static, compliance-driven quality control requirements with a performance-based Quality Management System (QMS) built on continuous evaluation, data-driven oversight, and systematic improvement.
- iii. Establish a two-tier QMS structure: Tier 1 requires the school to formally document and describe how its Quality Management System is designed and implemented; tier 2 requires objective evidence demonstrating that the QMS is actively functioning and producing measurable results. Tier 2 status carries defined operational privileges, which are contingent upon continued demonstration of QMS effectiveness and sustained performance outcomes.

c. Oversight

- i. Utilize Technology for Reporting: Develop or use software/AI to evaluate QMS/SMS/SAS reporting as it relates to part 141 tier level requirements, allowing the Central Management Office (CMO) to monitor performance trends, risk indicators, and compliance metrics in real time.
- ii. Transition from prescriptive administrative oversight to a performance-based, QMS-driven model that replaces cyclical certificate renewal.
- iii. Leverage data sharing and standardized metrics to establish structured data-sharing protocols and standardized performance metrics across institutions to enable objective comparison, trend analysis, and consistent tier-level evaluation by the FAA Central Management Office (CMO).

3. School Management, Oversight, and Documentation.

The FAA should consider making the following changes to how they manage and oversee a 141 certificated pilot school.

a. Documentation

- i. Establish SAS as the repository for all pilot school operational specifications, removing that detail from the Training Course Outline (TCO).
- ii. When a school is qualified by completing and adhering to the regulations/guidance and Quality Management System (QMS), certification is immediate, not subject to the subjective interpretation of the Principal Operations Inspector (POI).
- iii. Remove the landline requirement.

b. Renewal

- i. Eliminate static, arbitrary pass-rate requirements as the basis for maintaining a part 141 certificate and replace them with a performance-based oversight model grounded in an approved QMS.
- ii. Transition from periodic recertification to a currency-based compliance model, consistent with FAA approaches used in Certificated Flight Instructor (CFI) certification and part 135 operations, supported by continuous monitoring, structured engagement, and transparent data sharing.
- iii. Base certificate continuation on the school's demonstrated ability to implement, maintain, and continuously improve its

QMS, including effective corrective action and performance monitoring processes.

c. Amendments

- i. Allow aircraft to be added to a pilot school's operational fleet without the need for additional FAA approval if that aircraft already meets the appropriate FAA regulatory requirements to be an airworthy aircraft in the normal or utility category.
- ii. Expand the ability for 141 schools to modify TCOs without lengthy FAA oversight.
- iii. Changes to a school's principal business office or base of operations will be reviewed and overseen by the FAA Central Management Office upon notification.
- iv. All applications for the issuance or amendment of a certificate or rating must be accepted by the FAA via the SAS external portal.

d. Pilot Training Management Manual (PTMM)

- i. Develop a single manual that will house required policies, procedures, resources, etc. into one single manual. This includes QMS and SMS documentation.
- ii. Remove non-curriculum items from TCO (rooms, ops specs) and move them to a PTMM.
- iii. Part 141 TCO should separate ancillary from substantive details for streamlined review/approval.

e. Chief Instructor

- i. Increase authorizations of the chief instructor, reducing the need for FAA approvals and evaluations.
- ii. Allow the chief instructor to have more authority in appointing check instructors and making curriculum revisions through notification.
- iii. Remove the requirement for an Assistant Chief to be located at a satellite.

4. Consensus Standards

The FAA should support the development of consensus standards as an alternate means of compliance to the current 141 regulations.

- a. Establish a system to provide industry consensus standards for regulatory and policy guidance associated with part 141 pilot schools and pilot training.
- b. Create a framework for the use of consensus standards as the new regulation is implemented.

5. Examining Authority

The FAA should consider the following changes to FAR part 141 Examining Authority.

- a. Chief and Check Instructor Training
 - i. Train and standardize chief instructors like Designated Pilot Examiners (DPEs).
 - ii. Harmonize training and resources between DPEs and end-of-course (EOC) evaluators to enhance a standard approach to meeting Airman Certificate Standards (ACS) while also providing specific training to part 141 examining authority.
 - iii. Mandatory initial recurrent check instructor training (within 12 months) must address professionalism, impartiality, standardized assessment, and documentation for all instructors.
 - iv. Establish continuing qualification training for instructors, including mentoring and quality assessment.
- b. Examining Authority
 - i. Eliminate the Practical Exam metrics of 80%/90% for entry to part 141 and Examining Authority
 - 1. Authorization will be dependent on the QMS tier qualification of the school, the evaluation methods, check instructor training syllabus, and oversight provided by the chief instructor.
 - ii. Reform testing and evaluation philosophy focusing on the pilot schools ability to conduct evaluations appropriate to the Administrator and less reliance on the performance of the applicant.
 - iii. Examining authority will be a privilege that is dependent on the effectiveness of the schools QMS system at a tier 2. A privilege can be removed.
 - iv. Allow examining authority for reduced time (proficiency/competency) courses after performance metrics of the course suggest an equivalent level of safety/quality.
 - v. Allow examining authority for combined courses of training.
 - vi. Allow examining authority on new courses if the school has a tier two QMS.
 - vii. Remove the requirement for an ACR to be a certificated pilot and employed at that pilot school for one year.

6. Flight Simulator Training Devices (FSTDs) and other Technology Credit and Usage

The FAA should make the following changes regarding the use of FSTDs and technology in a 141 certificated pilot school.

- a. Credit
 - i. Explicitly and appropriately delineate the amount of training credit allowed for the various types of FSTDs.
 - ii. Increase the use of FSTD (BATD, AATD, FTD, and FFS) technology and allow for more FSTD training time to be credited towards training time requirements.
- b. Extended Reality (XR)
 - i. Allow training credit for XR devices.
 - ii. Establish a process allowing local FAA inspectors to evaluate and approve XR training devices individually based on deemed capability to achieve required training outcomes.
- c. Approvals
 - i. Establish an Enhanced Advanced Aviation Training Device (EAATD) category for FAA approved AATDs equipped with upgraded visual systems including wide field-of-view (FOV) visual and a representative flight deck layout.
 - ii. Create a standardized process allowing additional training tasks to be added to an FSTD's Letter of Authorization (LOA) through the FAA Central Management Office (CMO) based on demonstrated device effectiveness.

7. Changes to Appendices

The FAA should consider making the following additions and amendments to the part 141 Appendices.

- a. New appendices
 - i. Professional Pilot series of courses that are designed to develop professional aviators from the ground up and distribute the required training hours across the Private, Instrument, Commercial Single-Engine, and Commercial Multi-Engine training courses.
 - ii. Additional CFI class rating appendix: Reduce training time requirements. Example: No need to require 25 hours for an MEI rating.

- iii. Add appendix for “consensus standard based courses” to allow the development for future flight training courses for aircraft, procedure requirements, and/or technology that are not currently developed or foreseen.
 - iv. Move the ATP-CTP course to its own dedicated appendix.
 - v. Develop an appendix addressing the congressionally mandated Enhanced Qualification Program (EQP), as directed by Section 372 of the FAA Reauthorization Act of 2024 ([Public Law 118-63](#)).
 - vi. Recommend replacing the recreational pilot appendix A with sport pilot appendix A.
- b. Appendix Changes
 - i. Modify the additional class appendix to remove redundant cross-country requirements.
 - ii. Reduce the requirement for takeoffs and landings during night solos in the commercial to be completed at an airport with a control tower.
 - iii. Commercial pilot training: Allow for “or combination thereof” for the 10 hours solo or while performing the duties of pilot-in-command with a CFI on board, matching this requirement to the complex or TAA airplane requirement.
 - iv. Replace task-specific listings within each appendix with direct reference to the appropriate Airman Certification Standards (ACS) to eliminate duplication and ensure regulatory alignment with current performance standards.
 - v. Update the appendices to explicitly allow instrument training to be conducted in actual instrument meteorological conditions (IMC), using a view-limiting device, or any combination of the two.
 - vi. Modernize and update allowable credit percentages for Flight Simulation Training Devices (FSTD) within each appendix to reflect current technology and training capability.
- c. Appendix related rules
 - i. Recommend a rule under 141.11 to allow the ability to combine appendices into one training course.
 - ii. Recommend a rule to allow a structured pathway, through quality management methodologies, to approve reduced total time requirements in each course (after providing evidence to the administrator that there is no reduction in safety or quality).

- iii. Futureproof each appendix by including regulatory language to allow future modifications through use of consensus standards.

8. Registered Pilot School

The FAA should consider replacing the provisional pilot school with a registered pilot school.

- a. Replace the burdensome provisional pilot school framework with a Registered Pilot School category that provides FAA recognition without part 141 certification privileges.
- b. Create a simplified FAA registration pathway requiring only essential operational information, including training locations, aircraft types, certificates offered, and a designated point of contact.
- c. Allow Registered Pilot Schools to use registration status as a preparatory step toward eventual part 141 certification without requiring provisional-level administrative burden.

Additional Recommendations

1. Establish a Mentorship Program:
 - a. Partner seasoned flight schools with new schools to assist in the application process, especially for Quality Management Systems (QMS)
 - b. and Safety Management Systems (SMS)
2. Encourage Curriculum and Resource Sharing Between Schools
3. Unified Policy and Coordination Between AFS-810 and AFG-940 for Commercially Developed Syllabi
4. Modernization of 14 CFR 141.53(d) for Internet-Based Training Course Revisions
5. Clarification of Knowledge Test Endorsement Authority for Internet-Based Training Under Part 141
6. Standardize Training Course Outline (TCO)
7. Establish a “crosstalk” program between (EOC) check instructors and DPEs to enhance standardization.
8. Establish a National Flight Training Innovation & Research Program. Create and fund a dedicated FAA–industry–academic Flight Training Innovation & Research Program, modeled after the NextGen ATC testbed, to ensure U.S. pilot training remains modern, evidence-based, and globally competitive.
9. Evaluate the addition of an Initial Teaching Experience (ITE) for new instructors to be mentored/evaluated during their first 100 hours of providing dual instruction.
10. Extend the validity of a 141 graduation certificate from 60 days to 120 days.
11. The FAA should permit a part 141 pilot school's FAA-approved annual instructor standardization training program to satisfy the Flight Instructor Refresher Course (FIRC) requirements of 14 CFR §61.197, provided the training meets or exceeds the applicable regulatory content standards.
12. Evaluate the possibility of allowing CFIs to log instructional time conducted under part 141/142 in an FTD at a 1:2 credit ratio, when the device has dual controls and the instructor operates the device from a pilot station, with such time counting toward the 100-hour allowable credit permitted under 14 CFR § 61.159(a)(6) for the restricted ATP.

Additional Recommendations Appendices

- A. Sample FAA Order 8900.1
- B. Sample FAA Advisory Circular- QMS
- C. Sample QMS Manual
- D. Sample Corrective Action Report (CAR)
- E. Sample FAA QMS Inspection Checklist
- F. Sample ICAO SARP- QMS
- G. Sample Device Effectiveness Report

Rationale and Discussion

Recommendation 1: Central Management Office (CMO)

Establish a Central Management Office (CMO) responsible for initial certification and management of all 141 activities.

Applicable Regulation:

§ 141.21 Inspections

§ 141.53 Approval procedures for a training course

§ 141.87 Change of chief instructor

§ 141.91 Satellite Bases

Current Situation

The 14 CFR part 141 pilot schools are currently supervised by a Principal Operations Inspector (POI) that is assigned to a FAA Flight Standards District Office (FSDO). There are 80 FSDOs across the United States covering 77 geographical areas. A FSDO may be assigned to more than one geographical area. FSDOs are challenged with low staffing, high employee turnover, and a high workload involving a wide range of assigned roles and responsibilities. This affects the POIs availability to work with the part 141 pilot schools and timelines to complete tasks.

The purpose of the FSDO is composed of a wide range of local aviation responsibilities. FSDO primary responsibilities are associated with certification, surveillance, and certificate management of all air carriers, air operators, airmen, and air agencies for the following Federal Regulations: 14 CFR part 43, 61, 65, 91, 133, 135, 137, 141, 145, 147, 183, and other areas. Additionally, FSDOs are responsible for ground and flight incident investigations and safety assurance with operators, pilots, and mechanics.

According to the FAA website, the FAA asks you to contact a FSDO for the following reasons:

- Low-flying aircraft
- Accident Reporting
- Air carrier certification and operations
- Aircraft maintenance
- Aircraft operational issues
- Aircraft permits

- Airmen certification (licensing) for pilots, mechanics, repairmen, dispatchers, and parachute riggers
- Certification and modification issues
- Enforcement of Airmen & Aircraft Regulations
- Illegal Air Charter

This illustrates the high workload and wide range of responsibilities of a POI and FSDO.

FSDOs are challenged with low staffing and high employee turnover. This results in a high number of responsibilities and tasks being assigned to the POIs. This affects the POIs availability and timelines to complete tasks. In turn, pilot schools are not able to operate to their full capabilities waiting on FAA action and decision making.

Because each FSDO operates with a high degree of autonomy, there is a profound lack of standardization across the country. A training course outline (TCO) or syllabus that is approved in one district may be rejected in another, as individual inspectors often apply their own local interpretations of national policy. This forces flight schools to navigate unpredictable requirements that depend more on their geographic location FSDO management than on a clear, uniform standard. When a school attempts to scale or open satellite bases across different FSDO jurisdictions, they face conflicting demands from different Principal Operations Inspectors (POIs), making cohesive management nearly impossible and creating an administrative burden that serves no functional safety purpose.

This lack of standardization is exacerbated by the fact that many POIs at the FSDO level are not subject matter experts (SMEs) in part 141 regulation and policy. While these inspectors may be highly experienced in general aviation or part 135 charter operations, the specialized nature of a part 141 curriculum requires a level of nuanced understanding that is often missing from the local inspectorate. Because part 141 administrative work, such as auditing a complex TCO, is time-intensive and requires deep focus, it is frequently pushed to the bottom of a "triage" list dominated by immediate operational needs or emergency investigations. This combination of a knowledge gap and a diluted focus leads to a "back-and-forth" process where schools must educate their own inspectors on the regulations, leading to months or even years of delays in initial certification and simple amendments.

Feedback from part 141 pilot schools:

- The FSDO and POI are assigned too many tasks and responsibilities. Response times are longer than expected.
- Approvals for changes to training syllabuses take many months. Sometimes over 6 months. Similar comments for other areas including check instructor approval, requests for assistant chief instructor evaluations, updates to pilot school facilities, fleet of aircraft, and training devices.
- An assigned POI is lacking sufficient experience with 14 CFR part 141 affecting their decision making and response times.
- FSDO denial or delayed action for examining authority applications because it would require too much bandwidth for them to provide oversight. Some denials are associated with the FSDO and pilot school not having a full understanding of the role of the ACR.
- Decisions made by the POI are unstandardized and not always aligned with decisions made by other POIs and other pilot schools.
- “It depends on which FSDO you talk to.” With FSDOs having different interpretations and understanding of procedures.

Flight training providers have the option to operate under 14 CFR parts 61 or 141. Training providers may operate solely 61 or 141 or a mix of training under both 61 and 141. To be a training provider under part 61 requires no additional approval other than being a certificated flight instructor. To be a training provider operating under part 141, that training provider must comply with the appropriate regulations found in 14 CFR part 141 and be subject to additional FAA oversight and surveillance.

The benefits to being a training provider operating as a part 141 pilot school include.

- The prestige of being designated as a FAA pilot school providing standardized flight training in an environment with established safety policies and practices.
- For certain certificates and ratings, reduced aeronautical experience minimums when compared to part 61.
- The opportunity to be approved for examining authority allowing the pilot school to conduct their own evaluations for the issuance of a certificate or rating.

Timely and standardized FAA decision making is a need that will benefit part 141 pilot training.

The current administrative bottleneck acts as a powerful deterrent, discouraging the industry from participating in the part 141 environment. Many flight schools choose to operate under part 61, despite the benefits of a structured 141 environment, simply to avoid the "FSDO lottery" and the loss of revenue associated with waiting for syllabus approvals. When the certification process is seen as an obstacle rather than a partnership, the industry loses the high-quality, data-driven training environment that part 141 is designed to provide. This stifles innovation, as schools are hesitant to introduce new technology or modern teaching methods, knowing that the amendment process may be so arduous and slow that the technology will be obsolete by the time the FAA signs off on the change.

Furthermore, the delay in approving amendments presents a significant safety concern, particularly for schools that utilize a Quality Management System (QMS) or a Safety Management System (SMS). These programs are designed to acquire and analyze trend data to identify emerging safety risks or instructional deficiencies. When a school identifies a trend, such as a recurring error in a specific flight maneuver or a gap in student knowledge, they initiate an amendment to their TCO to mitigate that risk immediately. However, when these safety-critical amendments sit on a POI's desk for months due to FSDO inefficiency, the school is forced to continue training under a syllabus they know to be flawed. This creates a dangerous lag between the identification of a safety hazard and the implementation of its solution, fundamentally undermining the "continuous improvement" philosophy that is the cornerstone of modern aviation safety.

Similar issues faced with the management of Designated Pilot Examiners and part 135 Operators have already been eliminated by the FAA with the implementation of a Central Management Office (CMO).

Proposed Changes

CMO vs. FSDO

The primary efficiency gain in a centralized model comes from the consolidation of Subject Matter Experts (SMEs). By housing part 141 oversight within a dedicated Central Management Office (CMO), the FAA can ensure that every inspector is a specialist in flight training regulations and curriculum design. This specialization eliminates the "learning curve" that often occurs when a generalist inspector at a FSDO is assigned to review a new 141 syllabus. With experts at

the helm, the review process for Training Course Outlines (TCOs) and Training Specifications can be accelerated, reducing the months-long delays that currently plague schools. A centralized office also provides a "single source of truth," ensuring that regulatory interpretations are uniform across the country. This removes the "S" (Standards) inconsistency in FSDOs, where a curriculum approved in one state might be rejected in another, allowing schools to scale operations without fear of conflicting regional mandates.

A centralized management office should also create a national repository of training performance data that can support structured flight training research initiatives, allowing the FAA and industry to evaluate new training methods, instructor development models, and curriculum improvements using real operational data rather than isolated experience and opinions.

Goals and Objectives of a centralized FAA department responsible for Part 141

To provide consistent, standardized, and data-informed oversight of FAA-certificated pilot schools nationwide by centralizing key certification, compliance, and operational functions. This objective reflects a broader FAA strategy to modernize and streamline oversight of pilot training, improve regulatory consistency, and enhance the safety and effectiveness of aviation education in the U.S. This department aims to:

1. **Standardize Procedures and Decisions:** Ensure uniformity in how training curricula, instructor qualifications, examining authority, and operational approvals are evaluated and approved across all regions.
2. **Foster Regulatory Compliance and Ensure Flight School Certification Integrity.** Through duties and assignments delegated to the local Flight Standard District Offices (FSDO) and reviewed by this centralized management office, conduct regular audits, inspections, and reviews to ensure adherence to part 141 requirements and promote a culture of compliance. Maintain consistent standards for the certification and oversight of FAA-approved pilot schools through a centralized Operations Specification (OpsSpec) framework.
3. **Establish a balanced approach to when surveillance conducted by the FAA is needed and a compliance based system for pilot schools is appropriate.** Determine the additions and changes made to pilot school's Operations Specification (OpsSpec) and training syllabi that need to be inspected and approved by the FAA or if a compliance based system requiring a pilot school to inform the FAA of changes is suitable. Determine when pilot schools may utilize modern technology to inform the

FAA of changes that should not require surveillance and inspections. Accelerate pilot school modernization and updates by utilizing a compliance based system when appropriate.

4. **Relieve Local FSDOs and Clarify Roles and Responsibilities:** Shift certain oversight responsibilities from local Flight Standards District Offices (FSDOs) to a national-level entity, while still allowing for delegated tasks with clear guidance. Define and document the division of responsibilities between the centralized department and local FSDOs to avoid duplication and ensure efficient oversight.
5. **Deliver National Training and Communication:** Promote technical competency. Conduct standardized training for chief instructors, assistant chief instructors, and check instructors based on trends, regulatory updates, and common questions, ensuring alignment across the country. Conduct standardized training on pilot and flight instructor examining procedures and expectations to both the part 141 examining authority community and the designated pilot examiner (DPE) population. Validate the qualifications of instructors and evaluators (including Chief and Assistant chief instructors and Check Airman) through recurring training opportunities, to ensure high-quality, standards-aligned training.
6. **Enhance Data Transparency and Accountability and Enable Data Driven Oversight.** Utilizing a QMS and SMS, require timely and accurate reporting of training performance and operational data to support oversight, trend analysis, and continuous improvement. Replace the traditional two-year certificate renewal process with a system of self-reported performance data, enabling continuous oversight and accountability.
7. **Standardize Training Curricula.** Approve structured syllabi, airman certification tests, and examining authority that align with Airman Certification Standards (ACS) and reflect current aviation practices and technologies.
8. **Support School Development and Accessibility:** Foster a culture that supports the growth and effectiveness of part 141 schools by being accessible, responsive, and collaborative.
9. **Centralize Software and Recordkeeping Approvals:** Approve electronic recordkeeping systems and training software at the national level, reducing redundancy and improving data collection consistency.
10. **Digitization of FAA 141 Initial Application Process:** In alignment with the FAA Reauthorization Act of 2024, the Central Management Office (CMO) should modernize the initial Application Process, eliminating the option for a paper application.

11. **Support National Flight Training Research and Innovation:** Support a national FAA–industry–academic Flight Training Innovation and Research Program by leveraging centralized oversight and access to national pilot school performance data. The centralized office would help facilitate structured evaluation of new training methodologies, curriculum models, instructor development programs, and regulatory alternatives. Through coordination with approved part 141 and part 142 institutions, the FAA could validate training innovations before broader regulatory adoption and ensure that modernization efforts are supported by measurable safety and training outcomes. This approach aligns with broader FAA modernization initiatives and ensures that pilot training evolves using evidence-based research rather than anecdotal practices.

Roles and Responsibilities

1. **Pilot School Application:** Identifies the primary contact and authority for flight training providers applying to be a 14 CFR part 141 Pilot School. Conduct both in person and virtual surveillance providing guidance for both acceptable and deficient areas. In person surveillance may be delegated to the appropriate FSDO. Determines the outcome of the Pilot School application.
2. **Pilot School Currency:** Serve as the primary authority overseeing the recent experience of a Pilot School to maintain part 141 operational status and review that status every 2 years.
3. **Chief CFI Designation:** Review applications for chief instructor. Interview and evaluate chief instructor applicants via virtual and in person means. If required, conduct an appropriate flight proficiency evaluation. Duties may be delegated to the appropriate FSDO ensuring standardized procedures and evaluation criteria.
4. **Authority of Pilot School Configuration Data Vitals:** Review and authorize changes to Pilot School configuration data vitals maintained in SAS. Meet with Pilot School officials as appropriate.
5. **Application for Part 141 Examining Authority:** Serve as the primary contact for Pilot Schools applying for first time examining authority, additional examining authority authorizations, and ACR applications. Review Pilot School performance data, check instructor policies, and examining procedures. Coordinate with the appropriate FSDO, DPE, or ODA to observe an acceptable number of end-of-course tests conducted by Pilot School check instructors. Determines the outcome of the

examining authority application. Conducts standardized training on a regular basis with the part 141 examining authority community.

6. **Authority to Promote/Demote a Pilot School Operational Tier:** Through the combined efforts reviewing Pilot School self-reported performance data, SAS vitals, and surveillance determine the operational tier of a Pilot School. The operational tier level should be reviewed on a regular basis and when a Pilot School requests a review of their operational tier.
7. **Repository of Pilot School Self-Reported Performance Data:** Securely organizes, analyzes, and stores Pilot School self-reported performance data. Uses data models to identify when a Pilot School is authorized additional privileges or when a self-improvement plan is needed. Uses data to identify trends on a national scale. Communicates those trends for the purpose of improving pilot training and revising appropriate training materials. The centralized repository would also support national flight training research initiatives by providing anonymized data for evaluating training effectiveness, instructional quality, and emerging training methodologies.
8. **Authorize the use of Commercially Available Syllabi and Software:** Reviews commercially available syllabi and computer software. Authorizes their use on a national scale. Individual Pilot School software authorizations are not required given they are operating within the parameters prescribed by the national authorization.
9. **Authorize New or Revised Pilot School Syllabi:** With reliance on the Safety Assurance System (SAS) maintaining Pilot School OpsSpec and Vital information, review ground and flight training syllabi curriculum and authorize use as a 14 CFR part 141 course.
10. **Coordinate and Conduct Annual Training:** Provide training sessions for chief instructors and other Pilot School officials for the betterment of the Pilot School community, pilot training quality, and identified weak areas. Provide standardized training on examining procedures and expectations to the part 141 examining authority community. Provide training sessions for appropriately designated FSDO personnel ensuring procedures and evaluation criteria are standardized and relevant.
11. **Coordinate with Flight Standards District Offices:** Provide detail to the Flight Standards District Office (FSDO) who has been tasked by the Central Management Office (CMO) to complete an inspection or flight check. Delegated tasks from the CMO to FSDO are to be completed within 30 days.

FAA Part 141 Industry Advisory Board

Recommend the establishment of an FAA part 141 Industry Advisory Board. The objective of the FAA part 141 Advisory Board is to develop and provide insights and recommendations to the FAA part 141 OpsSpecs team. This board will be made up of industry pilot training stakeholders (for example: chief instructors, school leadership, OEM's and airline representatives). The Board will meet with FAA leadership quarterly to discuss current training trends, safety related metrics, technology advances, and operational concerns. The intent of the advisory board is to ensure continuous quality improvements and effective communications between the regulatory agency and the representative stakeholders.

Delegation of Tasks to the Flight Standards District Office (FSDO)

For the Central Management Office (CMO) to be successful, it will need to delegate specific tasks to the FSDO. The specific tasks should be related to conducting surveillance, interviews, observations, and the collection of data. The centralized FAA department may not delegate decision making. All decisions related to a Pilot School are done by the centralized office and may use information and data collected by the FSDO if the centralized FAA department is not able to perform the task themselves. Standardized decision making is a primary goal and objective for the new centralized FAA department responsible for 14 CFR part 141. Limiting decision making to the centralized FAA department is an appropriate method to standardize FAA decision making.

To prevent this delegation from falling back into the current cycle of administrative stagnation, this new model must include a strictly enforced 30-day completion window. Once the CMO tasks a local FSDO with an inspection or flight check, the FSDO should be required by national policy to complete the task and submit the resulting report within 30 calendar days. This "Service Level Agreement" between the CMO and the Flight Standards District Offices (FSDO) would provide flight schools with predictability and accountability. By establishing a firm deadline for field-level execution, the FAA can eliminate the "open-ended" delays that currently plague the industry, ensuring that a school's ability to grow or adapt is not held hostage by local office backlogs or competing priorities.

Use of the Safety Assurance System (SAS) External Portal

To successfully transition to a centralized model, flight schools must align their internal digital infrastructure with the FAA's Safety Assurance System (SAS) External Portal. Transitioning is not merely a matter of scanning paper

documents; it requires a systematic migration to a platform that supports real-time data exchange, electronic signatures, and automated compliance tracking.

To further bridge the gap between regulatory requirements and operational reality, the Central Management Office (CMO) will take a proactive role in providing comprehensive training on the use of the Safety Assurance System (SAS) External Portal. Currently, many schools are locked out, discouraged from using the system, or struggle with the technical nuances of the portal, leading to data entry errors and submission delays that stall the certification process. By offering standardized, flight-school-specific training, the FAA can ensure that administrators are both accurate and confident when complying with the mandate that all certification and certificate management tasks be handled digitally. This transition should also include the full integration of initial pilot school certificate applications into the SAS portal, effectively retiring the outdated FAA Form 8420-8 and Letter of Intent. Moving away from manual, paper-based application forms in favor of a scoped, digital workflow within SAS allows for real-time tracking, immediate feedback, and a significant reduction in the clerical errors that typically plague the pre-application and formal application phases. This modernization would transform the SAS portal from a mere compliance hurdle into a powerful management tool that streamlines the entire lifecycle of a flight school's certificate.

Data Collection and Analysis

The implementation of a Central Management Office (CMO) or a centralized oversight model, in line with current precedents and, allows the FAA to transition from antiquated, localized, subjective inspections to a high-level, data-driven oversight strategy. By leveraging data sharing and advanced analytics, a CMO can aggregate safety and quality performance metrics from part 141 schools nationwide into a single, cohesive database. Programs such as the Aviation Safety Information Analysis and Sharing (ASIAS) and the National General Aviation Flight Information Database (NGAFID) enable the FAA to identify systemic trends, such as recurring pilot deviations at specific airports or common instructional deficiencies in complex maneuvers, that a local FSDO might miss in isolation. These aggregated data trends can also serve as the basis for initiating targeted flight training research initiatives, allowing the FAA, academic institutions, and industry partners to study emerging safety issues, instructional challenges, and training effectiveness using real-world operational data. This centralized approach allows the FAA to move toward outcome-based oversight, where schools with a robust Quality Management System (QMS) and proven

safety records receive "credit" in the form of reduced administrative interference and faster amendment approvals. Instead of performing repetitive, manual audits, the CMO can use predictive analytics to focus its resources on high-risk areas, ensuring that regulatory oversight is both more efficient and more directly tied to actual safety outcomes. In addition, feedback from industry stakeholders, including Industry Advisory Boards (IABs) and training providers, can be combined with national data trends to identify priority areas for research and curriculum improvement, ensuring that modernization efforts reflect both operational experience and empirical analysis.

By standardizing these technical requirements under a Central Management Office (CMO), the FAA can ensure that every part 141 school operates with the same digital precision, regardless of its location, while simultaneously supporting a national framework for evidence-based flight training research and continuous improvement.

Recommendation 2: Safety Management System (SMS) and Quality Management System (QMS)

Currently, the FAA has filed differences with ICAO Annex 1 (regarding Quality Assurance) and Annex 19 (regarding Safety Management Systems), as 14 CFR Part 141 does not mandate these systems for pilot schools. As part of the Part 141 Modernization Initiative and in response to the 2024 FAA Reauthorization Act, the FAA has requested industry to establish formal Quality Management Systems (QMS) and Safety Management Systems (SMS) in the Part 141 environment.

Applicable Regulations

- § 141.5 Requirements for a pilot school certificate
- § 141.9 Examining authority privileges
- § 141.17 Duration of certificate
- § 141.52 Pilot Training Management Manual (PTMM)
- § 141.53 Approval procedures for a training course: General
- § 141.79 Flight Training
- § 141.81 Ground Training
- § 141.82 Safety Management System (SMS) Requirements
- § 141.83 Quality Management System (QMS) Requirements
- § 141.85 Chief instructor responsibilities

Current Situation

The lack of mandated safety management systems in part 141 pilot schools has placed the FAA in a position of non-compliance with ICAO SARPs on the global stage. Currently, the US has filed a significant difference with ICAO indicating a non-compliance with Annex 1 (ICAO Doc 9841) and Annex 19 SARPS. Annex 19 is an international standard requiring a Safety Management System (SMS) to be implemented by all approved training organizations (ATOs) that are exposed to safety risks during aircraft operations. Annex 1 mandates that member states also have quality assurance systems for each ATO. While the FAA has recently finalized SMS mandates for part 135 and part 121 organizations, part 141 pilot schools remain a notable exception. Consequently, the FAA is under immense pressure to align with ICAO standards and recommended practices. As part of the ongoing part 141 Modernization initiative, the implementation of SMS and QMS requirements will become a regulatory requirement for all certificated part 141 pilot schools. This transition is not merely a policy preference but a required

step to align U.S. regulations with ICAO standards and SARPs, ensuring that flight training in the United States remains recognized and validated by the global aviation community.

Proposed Changes

Require Part 141 to establish an SMS and QMS program

The FAA should modernize part 141 by mandating a Safety Management System (SMS) and Quality Management System (QMS) for all approved pilot schools, a move that fundamentally aligns the United States with ICAO Annex 1 and Annex 19 standards and recommendations. Currently, the FAA has filed a difference with ICAO SARPs because it lacks these regulatory requirements for training organizations; closing this gap ensures that U.S. pilot certificates remain globally competitive and recognized. Beyond compliance, the primary benefit of an SMS is a shift from a reactive safety posture to a proactive one, where schools use SMS data to identify hazards and operational risks so they can be managed before an incident or accident occurs. This systemic approach transforms the FAA's oversight from a burdensome, prescriptive administrative task into a performance-based model. By monitoring a school's internal data and audit results with a QMS, the FAA can replace the outdated, cyclical certificate renewal process with continuous, risk-based oversight, ensuring that schools are evaluated on their actual safety performance rather than their ability to survive a biennial paperwork audit. The distinction between quality control and quality assurance is well established in quality management literature, where inspection-based systems are shown to be less effective than continuous improvement models in complex operational environments (Anderson et al., 1994; Deming, 1986).

This approach is supported by established standards and empirical research. ICAO Annex 19 requires States to promote SMS frameworks that enable hazard identification, risk management, and continuous improvement (ICAO, 2022). FAA Advisory Circular AC 120-92B similarly emphasizes that SMS improves safety performance by integrating risk-based decision-making into daily operations (FAA, 2015). Research by Stolzer, Halford, and Goglia (2016) demonstrates that aviation organizations implementing SMS and QMS frameworks achieve measurable improvements in safety outcomes, operational consistency, and organizational learning. Reason's (1997) model of organizational accidents further shows that systemic, proactive controls are more effective than reactive, compliance-based approaches in mitigating latent organizational failures.

Empirical research in quality management demonstrates that structured QMS frameworks improve organizational performance, process consistency, and operational effectiveness. Studies of U.S. organizations implementing ISO 9001 and Total Quality Management (TQM) show that quality systems enhance process control, reduce defects, and improve overall operational performance by standardizing workflows and enabling continuous improvement (Anderson, Rungtusanatham, & Schroeder, 1994; Easton & Jarrell, 1998). Additional research indicates that organizations with mature quality systems achieve higher levels of process reliability, consistency, and quality outcomes, particularly when quality management practices are fully integrated into operational decision-making (Kaynak, 2003). These findings support the application of QMS in flight training environments, where standardization, repeatability, and consistent evaluation are critical to both safety and certification quality.

QMS Tiers

The level of a school's QMS maturity will directly dictate its regulatory relationship with the FAA through a two-tiered approval system.

Tier 1 status is granted to schools that can demonstrate that a formal QMS structure is established and documented, including defined processes for internal audits, data collection, corrective action, and management review. At this level, the school must demonstrate that the QMS framework exists and is being implemented, but not yet required to produce measurable outcomes. These schools will continue to operate in a more traditional manner, requiring FAA approval for syllabus changes and amendments while the organization builds data and system maturity.

In contrast, a tier 2 school is one that can demonstrate through documentation that its QMS is not only present but actively driving safety improvements and instructional quality. At this level, the school must provide objective, data-driven evidence that its QMS is functioning effectively, including measurable improvements in training efficiency, standardization, and performance outcomes.

Tier 2 schools are granted significantly more autonomy, including the ability to implement curriculum amendments and operational changes through notification rather than formal approval. Furthermore, achieving tier 2 status would be a mandatory prerequisite for holding Examining Authority, ensuring that only the most robust and self-correcting organizations are permitted to certify their own students. This distinction is consistent with quality management research demonstrating that organizational performance improvements are most significant when quality systems are actively managed, measured, and integrated

into daily operations rather than treated as compliance mechanisms (Kaynak, 2003; Easton & Jarrell, 1998).

This tiered, performance-based oversight model aligns with modern regulatory approaches and emphasizes evaluation of both the presence and effectiveness of organizational systems. This tiered approach incentivizes schools to invest in their organizational processes and culture, rewarding high-performance organizations with the operational agility needed to thrive in a modern training environment.

Data Collection and Analysis

The data collected through a mandated Quality Management System (QMS) and Safety Management System (SMS) serves as the "fuel" for a larger, national safety ecosystem, allowing the FAA to move beyond localized oversight and toward system-wide safety analytics. Consistent with quality management research, the structured data generated by a QMS provides a reliable foundation for performance measurement, trend analysis, and continuous improvement, enabling organizations to systematically identify process variation and performance gaps (Anderson et al., 1994; Kaynak, 2003). The implementation of a Central Management Office (CMO) enables the FAA to operationalize this approach by transitioning from localized, subjective inspections to a high-level, data-driven oversight strategy. By leveraging data sharing and advanced analytics, a CMO can aggregate safety and quality performance metrics from part 141 schools nationwide into a single, cohesive database. The CMO can model the data collection, analysis, and sharing processes of programs such as the Aviation Safety Information Analysis and Sharing (ASIAS) or General Aviation Joint Safety Committee (GAJSC). Pilot schools contribute to their SMS and QMS derived metrics, such as student proficiency trends, maneuver-level performance data, re-training events, standardization exam outcomes, flight data exceedances, voluntary safety reports, and safety trends, to a massive, centralized repository.

When this data is aggregated, the FAA and industry safety teams can identify emerging hazards that are invisible to a single operator. Importantly, these hazards are often revealed through patterns in training performance rather than traditional incident reporting. For instance, data might reveal a nationwide trend of unstable approaches at specific airport types or a recurring instructional deficiency in a particular aircraft make and model. This allows for the development of targeted safety enhancements and curriculum updates that benefit the entire training community, shifting the industry from a reactive posture

to a proactive, predictive safety model. This aligns with research showing that mature quality systems enable early identification of systemic issues through performance data rather than relying solely on outcome-based indicators such as failures or incidents (Easton & Jarrell, 1998).

These QMS-derived insights can then be translated into SMS risk assessments, allowing the FAA to identify precursors to accidents before they manifest operationally. This creates a closed-loop system in which performance data informs risk management, enabling the development of targeted safety enhancements, curriculum updates, and instructional improvements that benefit the entire training community.

In addition to safety benefits, aggregated QMS data provides a foundation for evidence-based flight training research. Centralized data allows the FAA, pilot schools, academic institutions, and industry partners to analyze real-world training performance, identify instructional challenges, and evaluate training effectiveness at a national scale.

To accurately collect this data, the FAA must develop a uniform 1–5 grading scale that accommodates diverse legacy systems. The FAA must first establish a "Common Competency Framework" anchored strictly to the existing Airman Certification Standards (ACS). Because the ACS already defines the specific tolerances for a "passing" maneuver, such as maintaining altitude within ± 100 feet, it serves as the objective baseline for a grade of 3 (Proficient). In this model, a grade of 1 would represent initial knowledge or a failure to meet standards, a 2 would map to "Practice" or "Assisted" maneuvers where the student requires instructor intervention, and a 4 or 5 would represent "Mastery" or "Exemplary" performance where the student demonstrates superior situational awareness and precision beyond the minimum requirements. By anchoring the middle of the scale to the ACS "Pass," the FAA creates a logical "Rosetta Stone" that allows binary and qualitative data to be converted into quantitative values without losing the original context of the training.

Standardization of data is critical to enabling aggregation and comparability across organizations. Without normalization, QMS data remains siloed and unsuitable for national analysis. Accordingly, the FAA should develop a standardized technical "crosswalk" protocol integrated into flight school management software and Safety Management Systems (SMS). Instead of forcing schools to change their daily terminology, the FAA would provide an API or data-mapping schema that automatically converts a school's internal "Pass" to a numerical 3 or a "Perform" to a 3 before the data is transmitted to the national

database. This ensures that when schools contribute to a national data share, the information is "cleansed" and uniform, allowing the FAA to perform high-level trend analysis. For instance, if the aggregated national data shows a spike in students stagnating at a level 2 for "Power-Off Stalls," the FAA can identify a systemic training deficiency or an ambiguity in the ACS that needs to be addressed nationally. Ultimately, this numerical standardization transforms isolated silos of school data into a predictive safety tool that can identify risks across the National Airspace System before they lead to accidents.

To ensure that schools feel confident in sharing this sensitive information, the data is subjected to a rigorous de-identification process before it is analyzed at the aggregate level. Personal identifiers, such as pilot names, specific tail numbers, and the identity of the flight school itself, are stripped away and replaced with non-specific markers. This ensures that the focus remains entirely on safety trends and operational risk rather than on individual performance or punitive enforcement. By protecting the privacy of the participants, the FAA fosters a culture of transparency where schools are incentivized to share honest, high-fidelity data. By protecting participant anonymity and focusing on aggregate trends, the FAA fosters a culture of transparency and continuous improvement. In this model, QMS serves as the primary data generator, SMS provides the risk analysis framework, and the CMO enables system-wide integration and oversight. The result is a national "safety shield," where insights gained from one training organization can proactively improve safety outcomes across the entire aviation system., where a lesson learned at a small school in Florida can lead to a safety improvement that prevents an accident at a large university in California.

SMS: A Superior Alternative to Prescriptive Rules

As the aviation industry moves toward mandatory Safety Management Systems (SMS), the rigid requirements of § 141.38 become even more obsolete. An SMS allows a school to move away from a "check-the-box" mentality and toward a Safety Risk Management (SRM) process. Instead of following a blanket FAA rule that says a runway must be "adequate," a school's SMS would require a formal risk assessment of their specific operating environment. This includes analyzing historical data, student experience levels, and aircraft performance charts to set internal minimums that are often *stricter* than the current FAA requirements.

SMS represents a fundamental shift from compliance-based oversight to a performance-based, risk-informed framework that emphasizes proactive hazard identification and continuous improvement (FAA, 2015; ICAO, 2022). Rather than

relying on static regulatory language, SMS requires organizations to actively assess and manage risk within their specific operational context.

Under an SMS framework, Safety Risk Management (SRM) replaces the traditional “check-the-box” mentality with a structured, data-driven process. Schools are required to identify hazards, analyze associated risks, and implement mitigations tailored to their environment. This includes evaluating factors such as historical operational data, student proficiency levels, instructor experience, and aircraft performance characteristics. By incorporating these variables, schools can establish internal operating standards that are more conservative and operationally relevant than generalized regulatory requirements.

This approach aligns with established safety theory, which demonstrates that prescriptive rules alone are insufficient to manage complex, dynamic systems such as aviation training environments. Reason’s (1997) model of organizational accidents highlights that latent organizational conditions are best mitigated through systemic, proactive controls rather than reactive compliance measures. Similarly, Stolzer, Halford, and Goglia (2016) emphasize that SMS enables organizations to detect and address safety risks before they manifest as incidents or accidents by embedding risk management into daily operations.

Furthermore, ICAO Annex 19 promotes SMS as the global standard for aviation safety, requiring frameworks that support hazard identification, risk management, and continuous monitoring of safety performance (ICAO, 2022). The FAA reinforces this philosophy through Advisory Circular 120-92B, which emphasizes that SMS improves safety outcomes by integrating risk-based decision-making into operational processes and organizational culture (FAA, 2015).

In the context of flight training, SMS provides a more adaptive and effective mechanism for managing operational risk than prescriptive regulations. Instead of relying on fixed definitions or minimums, schools can develop dynamic policies based on real-world performance data. These policies are continuously evaluated and refined through safety assurance processes, including internal audits, data analysis, and feedback loops.

Ultimately, replacing prescriptive requirements with SMS-based risk management enables a more resilient and responsive safety system. It shifts the focus from regulatory compliance to operational performance, ensuring that safety standards evolve alongside changes in training environments, technology, and student populations. This transition enhances safety outcomes while aligning part 141

training organizations with modern regulatory philosophies and international best practices.

How SMS Mandates Minimum Airport Requirements

Under an SMS framework, prescriptive airport minimums within part 141 become unnecessary because safety requirements are internally derived through formal hazard identification and risk assessment processes rather than externally imposed static rules. For example, while § 141.38 attempts to define "adequate" runway length, this determination is already inherently addressed through aircraft performance requirements, pilot responsibility under § 91.103, and risk-based decision-making embedded within SMS (FAA, 2015).

An SMS-driven program requires each school to evaluate its specific operational environment, including student experience levels, instructor oversight, aircraft performance, and local operating conditions—and to establish appropriate limitations based on that analysis. Rather than relying on a generalized federal standard, schools develop tailored operational controls that are often more conservative and operationally relevant than prescriptive regulations (ICAO, 2022; Stolzer et al., 2016).

Additionally, airport infrastructure and operational suitability are already governed by broader regulatory and certification frameworks, making a separate part 141 requirement redundant. Maintaining duplicative requirements within part 141 introduces administrative burden without providing additional safety value. This aligns with modern research showing that aviation oversight is transitioning from prescriptive rule compliance toward performance-based and risk-based oversight models that evaluate the effectiveness of organizational safety systems rather than adherence to fixed rules (Gilbert et al., 2025).

By removing airport-specific minimums from part 141, the FAA shifts oversight from redundant compliance checks to evaluation of a school's ability to effectively manage risk through its SMS. This allows for dynamic, data-driven decision-making rather than adherence to static criteria that may not reflect real-world conditions.

Embedding these determinations within a school's Safety Policy and Safety Assurance processes ensures that operational limits are continuously evaluated, validated through data, and improved over time. This creates a "living" safety system that adapts to changes in fleet, training environment, and student population.

Ultimately, eliminating airport minimums from part 141 does not reduce safety; it enhances it by replacing outdated, one-size-fits-all requirements with a proactive, performance-based framework that is continuously monitored and improved.

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Recommendation 3: Management and Oversight of Pilot Schools

Modernize the management and oversight of Pilot Schools, utilizing electronic record keeping and updating the documentation requirements.

Applicable Regulations

- § 141.5 Requirements for a pilot school certificate
- § 141.17 Duration of certificate
- § 141.21 Inspections
- § 141.25 Business office and operations base
- § 141.33 Personnel
- § 141.39 Aircraft
- § 141.43 Pilot briefing areas
- § 141.45 Ground training facilities.
- § 141.52 Pilot Training Management Manual (PTMM)
- § 141.53 Approval procedures for a training course
- § 141.55 Training course: Contents
- § 141.89 Maintenance of personnel, facilities, and equipment
- § 141.91 Satellite bases

Current Situation

The current oversight model of pilot schools by Flight Standards District Offices (FSDOs) remains rooted in a traditional quality control philosophy rather than a modern quality assurance framework. This decentralized approach reflects 20th-century administrative practices that focus on periodic inspection and compliance verification instead of continuous performance monitoring and systemic risk management. Quality management research consistently shows that inspection-based quality control systems are less effective than continuous improvement-driven quality assurance models in complex operational environments (Anderson et al., 1994; Deming, 1986).

A clear example of this outdated model is the two-year certificate renewal cycle required under 14 CFR § 141.27. This recurring “hard reset” forces schools to undergo a comprehensive re-evaluation of their operations every 24 months, regardless of demonstrated safety performance, instructional effectiveness, or operational stability. The process emphasizes documentation review and compliance confirmation, hallmarks of quality control, rather than evaluating how effectively a school manages risk, improves training outcomes, or strengthens safety culture over time. This episodic oversight model is inconsistent with

modern regulatory approaches, which emphasize continuous, risk-based, and performance-based oversight rather than periodic compliance inspections (Federal Aviation Administration [FAA], 2015; International Civil Aviation Organization [ICAO], 2022).

For both the school and the FAA, this creates a cyclical administrative burden that consumes significant resources yet provides only a static snapshot of compliance. It does not meaningfully assess whether the organization has effective internal controls, data-driven decision-making, proactive hazard identification processes, or measurable safety improvement mechanisms. Inspectors and school administrators become absorbed in repetitive re-validation of largely unchanged materials instead of analyzing real-time performance data, instructor standardization trends, student completion metrics, or leading safety indicators. Research in quality management demonstrates that repetitive compliance cycles often fail to improve operational performance when they are not linked to continuous data analysis and feedback systems (Easton & Jarrell, 1998; Kaynak, 2003).

Equally problematic, this biannual compliance reset stifles innovation. Because schools must continually prepare for an arbitrary two-year renewal event, leadership attention and institutional resources are redirected toward maintaining regulatory paperwork rather than developing improved training methodologies, integrating emerging technologies, modernizing curricula, or piloting alternative instructional delivery models. The system incentivizes stability of documentation rather than evolution of practice. Any meaningful program modification risks triggering additional scrutiny or administrative complexity during renewal, creating a subtle but powerful disincentive to innovate. This effect is consistent with regulatory research demonstrating that rigid, prescriptive oversight frameworks can inhibit innovation by prioritizing compliance stability over adaptive improvement (Baldwin & Black, 2008).

In effect, the oversight structure reinforces procedural conservatism over performance advancement. Schools become focused on “passing renewal” rather than continuously enhancing training effectiveness. This dynamic is inconsistent with the broader aviation industry, where innovation, supported by structured risk management and data-driven assurance, is central to safety advancement.

Modern aviation sectors, including air carriers, repair stations, and manufacturers, have transitioned toward quality assurance systems that emphasize continuous monitoring, internal auditing, corrective action tracking,

and performance-based oversight. Pilot school oversight should similarly evolve. Replacing episodic certificate renewal with a structured Quality Management System (QMS) framework would shift the focus from reactive compliance verification to proactive assurance of training quality, operational safety, and instructional effectiveness.

Such a transition would not reduce regulatory rigor; rather, it would modernize it, aligning pilot school oversight with the risk-based, performance-oriented oversight philosophy already embedded elsewhere in the aviation system.

Furthermore, the methods of documentation and storage remain shockingly antiquated, often relying on fragmented digital files or physical folders that are not integrated into a national database. While some progress has been made with WebOPSS and SAS, many FSDOs still manage part 141 records as isolated "islands" of information. This lack of a centralized, cloud-based repository means that if a school's Principal Operations Inspector (POI) is unavailable or reassigned, the new inspector often has no historical context or easy access to the school's specific curriculum history. This fragmented storage also makes it nearly impossible for the FAA to conduct meaningful cross-district data analysis. This lack of data integration limits system-wide safety analysis and is inconsistent with modern aviation safety programs that rely on centralized data systems for trend identification and risk mitigation. When combined with the excruciatingly slow amendment process for courses and Training Course Outlines (TCOs), the system becomes a bottleneck for innovation. Because amendments are processed as manual, low-priority tasks within a generic FSDO workload, even safety-critical updates to a syllabus can sit in a queue for months. This delay prevents schools from quickly adapting to new technology or correcting instructional trends identified by their own internal quality reviews, effectively punishing schools for trying to maintain a proactive safety culture. Delays in implementing safety improvements are contrary to SMS principles, which emphasize timely hazard mitigation and continuous feedback loops (FAA, 2015).

Proposed Changes

Certificate Currency vs Renewal

The FAA should utilize the Central Management Office (CMO) to fundamentally modernize part 141 oversight by replacing the archaic two-year renewal cycle with a model of continuous "currency" based on Quality Management System (QMS) effectiveness. Rather than forcing schools into a resource-heavy recertification process every 24 months, which creates an unnecessary administrative "reset" for both the agency and the operator, the FAA should move

toward a Safety Assurance System (SAS) similar to that of part 121 air carriers. Under this framework, a school's operational status would remain valid as long as their internal QMS continuously demonstrates that training standards and safety protocols are being met. Crucially, this transition must involve abandoning the 80% first-attempt pass rate as the primary barometer of school quality. The pass rate is a blunt and often misleading metric that fails to account for student demographics, external factors like DPE variability, or the depth of the training environment; more importantly, it encourages a "checkbox" culture where schools may prioritize teaching to the test over holistic instructional excellence (Deming, 1986; Kaynak, 2003). By pivoting to outcome-based oversight, where the CMO monitors real-time safety data, student progress trends, and internal audit results, the FAA can ensure that a school is truly operating as a high-quality institution, shifting the focus from surviving a biennial paperwork audit to maintaining a culture of continuous improvement.

Pilot Training Management Manual (PTMM)

The current structure of Federal Aviation Administration (FAA) part 141 documentation, specifically the rigid formatting of Training Course Outlines (TCOs) and individual syllabi, is a primary driver of administrative gridlock. To resolve this, the FAA should transition to a bifurcated two-document system. The first document, a Pilot Training Management Manual (PTMM), would serve as a centralized repository for all institutional information that is not course-specific. This would encompass safety policies and procedures, facility descriptions, aircraft fleets, base airports, pilot briefing areas, and ground training resources available to the entire student body. By decoupling these universal school standards from the individual curricula, the FAA would create a more modular and logical regulatory framework that mirrors the sophisticated management manuals used in part 121 and 135 operations.

The second document would consist strictly of the Syllabus and TCO, containing only the information unique to a specific course of training, such as lesson objectives, completion standards, and stage check requirements. The efficiency improvement gained from this separation cannot be overstated. Currently, if a flight school makes a minor update to its physical facilities or adds a new tail number to its fleet, it is often required to file an amendment for every single approved TCO on its certificate. This redundant process forces school administrators to submit dozens of identical changes and requires FAA inspectors to review and sign off on the same information multiple times.

Transitioning to a PTMM would simplify this entire process into a single amendment for a single document, which would then automatically apply to all courses across the school's curriculum. This "single-point-of-change" architecture significantly reduces the clerical workload for the flight school and drastically cuts the "paper-pushing" requirements for the FAA's Central Management Office or local FSDO. By eliminating the need to process dozens of repetitive amendments for a single facility change, the FAA can redirect its limited resources toward substantive safety oversight and curriculum quality, rather than redundant administrative tasks.

Beyond the structural reorganization of the documents, the transition to a Pilot Training Management Manual (PTMM) provides a critical opportunity for the FAA to conduct a comprehensive "audit of relevance" regarding its legacy requirements. As the PTMM is developed, each regulatory mandate should be evaluated to ensure it aligns with modern operational realities rather than remaining as a vestige of 20th-century bureaucracy. A prime example of such an outdated requirement is the mandate for a flight school to maintain a dedicated landline telephone. In an era defined by ubiquitous cellular connectivity, VOIP systems, and high-speed digital communication, the physical copper-wire landline has become an obsolete overhead cost that provides no tangible safety or instructional benefit. By stripping away these "relic" regulations during the creation of the PTMM, the FAA can ensure that the new manual is not just a reorganization of old paperwork, but a streamlined, modern standard that reflects the current state of aviation technology and business infrastructure.

Chief Instructor Authority

To further modernize part 141 operations, the FAA should significantly increase the regulatory authority of the chief instructor, shifting their role from a reactive administrator to a proactive quality manager. Under a Central Management Office (CMO) oversight model, chief instructors should be granted the autonomy to appoint check instructors, add aircraft, and implement TCO and curriculum revisions through a streamlined "notification" process rather than waiting for formal FAA approval. In a high-functioning Quality Management System (QMS), tier 2, the chief instructor is the individual most intimately familiar with the school's instructional trends and safety data. Requiring them to wait months for a Principal Operations Inspector (POI), who may lack specific 141 expertise, to sign off on a minor syllabus tweak or a qualified staff promotion creates unnecessary operational friction. By allowing these changes to be effective upon notification to the FAA, the agency empowers the school to adapt instantly to

safety trends while maintaining a clear audit trail for the CMO to review during periodic data-driven evaluations.

To streamline fleet management, the FAA should grant chief instructors the authority to add additional aircraft to their school's certificate without a mandatory FAA inspection, provided the aircraft is of the same make and model as a fleet type already approved in the school's Pilot Training Management Manual (PTMM). Currently, even when a school acquires an identical aircraft to one they have operated for years, the addition of that new tail number can be delayed for weeks or months as it sits in a FSDO queue awaiting a physical inspection or clerical sign-off. Under a modernized Central Management Office (CMO) model, the addition of an identical airframe should be a simple "notification" process. Since the curriculum, maintenance procedures, and instructor training for that specific make and model have already been vetted and approved, the individual tail number represents no new regulatory risk. By empowering the chief instructor to verify the aircraft's airworthiness and conformity to the approved Pilot Training Management Manual (PTMM), the FAA would eliminate a significant administrative bottleneck, allowing schools to scale their capacity in real-time to meet student demand while focusing FAA inspector resources on more complex, high-risk oversight tasks.

In tandem with this increased authority, the FAA should remove the antiquated requirement for a designated assistant chief instructor to be physically assigned to every satellite location. This mandate, rooted in a pre-digital era of aviation, has become a significant barrier to entry and expansion for many schools, as finding qualified personnel who meet the rigid experience requirements for each specific geographic site is increasingly difficult. Modern technology, including real-time flight tracking, cloud-based training records, and instant video conferencing, allows a centralized management team to provide a level of oversight that is often superior to having a single individual physically present at a remote location. By leveraging these digital tools, a single Chief or Assistant Chief can maintain high-fidelity supervision over multiple sites, ensuring standardized training quality across the entire organization without the logistical and financial burden of redundant staffing. This change would align part 141 oversight with modern business practices, focusing on the effectiveness of supervision rather than the physical proximity of an office chair.

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Recommendation 4: Consensus Standards

The FAA should integrate industry consensus standards as an alternate means of compliance for most of the 141 regulations.

Applicable Regulations

§ 141.1 Applicability.

§ 141.11 Pilot school ratings.

§ 141.31 Applicability

§ 141.35 Chief instructor qualifications

§ 141.36 Assistant chief instructor qualifications

§ 141.37 Check instructor qualifications

§ 141.39 Aircraft

§141.41 Flight Simulation Training Devices (FSTDs), training aids, and equipment

§ 141.43 Pilot briefing areas

§ 141.45 Ground training facilities

§ 141.51 Applicability

§ 141.53 Approval procedures for a training course: General

§ 141.55 Training course: Contents

§ 141.61 Applicability

§ 141.69 Prerequisites, Process, and Procedures for an End-of-Course Test

§ 141.71 Applicability

Appendix R to Part 141- Consensus Standard-Developed Training Courses

Current Situation

The current regulatory structure of FAA part 141 is fundamentally hindered by its reliance on prescriptive, static mandates that act as a "snapshot in time," captured at the moment the rule was written. Because the federal rulemaking process is notoriously slow and legally complex, these regulations often remain unchanged for decades, many foundational elements of part 141 still lean on concepts from the 1940s, with the last major update occurring in 1997. By the time a new regulation is drafted, vetted, and signed into law, the "state-of-the-art" technology it was meant to address has often already been superseded. This creates a perpetual cycle of regulatory lag, where flight schools are forced to train using 20th-century standards to operate in a 21st-century National Airspace System. This lag between technological advancement and regulatory adaptation has been widely identified as a structural limitation of prescriptive rulemaking systems, particularly in high-technology industries (Marchant et al., 2011;

National Academies of Sciences, Engineering, and Medicine [NASEM], 2020). When regulations are hard-coded with specific hour requirements or outdated equipment mandates (like the requirement for landline phones or towered-airport night solos), they become an anchor that prevents the industry from adopting safer, more efficient modern alternatives. Prescriptive regulatory frameworks can constrain innovation by locking organizations into legacy compliance structures that are not aligned with evolving operational realities (Marchant et al., 2011).

This "picture of a moment in time" approach is increasingly untenable because it is impossible for regulators to predict the exponential pace of technological advancement. When the current part 141 appendices were last overhauled, Global Positioning Systems (GPS) were in their infancy, Electronic Flight Bags (EFBs) didn't exist, and Virtual Reality (VR) simulation was the stuff of science fiction. Today, we are on the precipice of integrated Artificial Intelligence (AI) in the flight deck, electric propulsion, and Advanced Air Mobility (AAM), none of which can be adequately managed by a "one-size-fits-all" prescriptive checklist. Research in emerging aviation technologies emphasizes that regulatory systems must become more adaptive and flexible to accommodate rapid innovation cycles (NASEM, 2020). A regulation written today to address current technology will inevitably be obsolete tomorrow. This rigid structure forces the FAA into a reactive posture, where they must constantly issue "exemptions" or "legal interpretations" to allow for innovation, further complicating the administrative burden for both the agency and the school. Reactive regulatory approaches increase complexity and administrative burden by requiring case-by-case exceptions instead of scalable regulatory solutions (Marchant et al., 2011).

Suggested Changes

To solve the "moment-in-time" failure of static regulations, the FAA should integrate industry-led consensus standards as an authorized alternate means of compliance (MOC) for part 141 schools. This approach is directly supported by federal policy, including the National Technology Transfer and Advancement Act (NTTAA), which directs federal agencies to adopt voluntary consensus standards wherever practical (Office of Management and Budget [OMB], 2016). This model, successfully proven in the part 23 rewrite and the Light-Sport Aircraft (LSA) category, allows the FAA to maintain its role as the ultimate safety authority while outsourcing the development of technical training requirements to an industry-run advisory board through organizations like ASTM International. Federal guidance further emphasizes that consensus standards improve regulatory efficiency, reduce duplication, and leverage industry expertise in technical domains (OMB, 2016). Under this framework, experts from flight schools, avionics manufacturers,

and safety organizations would collaborate to build comprehensive standards that reflect modern best practices. Once developed, these standards are submitted to the FAA for formal acceptance. By adopting this approach, the FAA can leverage a "living" regulatory document that is updated by the people most familiar with emerging technologies, ensuring that training requirements keep pace with the real-world environment without requiring a multi-year federal rulemaking cycle for every minor adjustment.

Implementing consensus standards would provide flight schools with a powerful choice: they could continue to operate under the existing, "hard-coded" part 141 regulations, or they could opt into the FAA-accepted consensus standards. This dual-path system respects the legacy foundations of flight training while providing an "innovation lane" for schools that wish to utilize advanced technologies like VR simulation, AI-driven adaptive learning, or electric aircraft. Dual compliance pathways are recognized as an effective mechanism for balancing innovation with safety assurance, allowing organizations to adopt advanced practices while maintaining baseline regulatory compliance (OMB, 2016). Because the ASTM board would meet regularly to review and revise these standards, the regulatory environment would transition from a stagnant snapshot to an agile, performance-based ecosystem. When a new instructional technology emerges, the advisory board can quickly evaluate its safety and efficacy, update the consensus standard, and submit it for FAA acceptance (via a Notice of Availability), allowing schools to modernize their curricula in months rather than decades. This significantly reduces the delay between technological innovation and regulatory acceptance, which is critical in rapidly evolving industries such as aviation (NASEM, 2020). This shift would finally break the cycle of regulatory lag and ensure that the FAA remains a partner in innovation rather than a bottleneck to progress.

The ASTM Consensus Standards Process

The ASTM International consensus standards process is an industry-driven method for developing technical requirements that the FAA "accepts" as an approved means of compliance for modern regulations. Unlike traditional government-mandated rules, these standards are created by a diverse committee of stakeholders, including manufacturers, flight schools, and the FAA, ensuring that guidelines are technically rigorous and commercially viable. Consensus standards development processes are specifically designed to incorporate diverse stakeholder input and produce technically robust, broadly accepted standards (ASTM International, 2019). The process is rooted in openness, balance, and due process, where no single group can dominate the

conversation. This collaborative environment allows the industry to pivot more quickly than federal rulemaking, enabling the integration of new technologies like AI-driven flight simulators or electric propulsion in months rather than years.

The lifecycle of an ASTM standard begins with a work item identified by a subcommittee, followed by a multi-stage balloting process. During these ballots, members have the right to vote and submit "negative" votes with technical justifications. This triggers a mandatory resolution process where the subcommittee must address the objection, either through persuasive argument or by amending the standard, to reach a true technical consensus. This structured consensus process ensures that standards are rigorously vetted, transparent, and technically validated prior to adoption (ASTM International, 2019). Once published, the FAA can officially recognize these standards via an Advisory Circular (AC). By using this model, the FAA effectively crowdsources global technical expertise, ensuring oversight remains at the cutting edge of innovation while maintaining high safety margins.

ASTM Participation Requirements

To join and utilize ASTM International consensus standards, a flight school or aviation organization must first establish a formal membership, typically by enrolling as either a Participating Member or an Organizational Member. As of 2026, the annual fee for a Participating Membership is \$115, which allows an individual (such as a chief instructor) to join technical committees, vote on ballot items, and directly influence the development of future standards. For schools seeking broader corporate recognition and transferable membership, an Organizational Membership costs \$400 per year. Beyond membership, the primary requirement for utilization is securing legal access to the standards themselves. A significant benefit of ASTM membership is that it includes one free volume of the Annual Book of ASTM Standards each year.

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Recommendation 5: Examining Authority

The FAA should modernize and make the following changes to the current 141 examining authority.

Applicable Regulations

- § 141.9 Examining authority privileges
- § 141.17 Duration of certificate
- § 141.37 Check instructor qualifications
- § 141.52 Pilot Training Management Manual (PTMM)
- § 141.55 Training course: Contents
- § 141.61 Examining Authority
- § 141.63 Examining authority privilege requirements
- § 141.65 Privileges
- § 141.67 Operations, limitations, and reports
- § 141.69 Prerequisites, Process, and Procedures for an End-of-Course Test
- § 141.73 Privileges

Current Situation

One key benefit of being a part 141 certificated pilot school is the opportunity to be authorized for part 141 examining authority, which allows the pilot school to conduct its own evaluations for the issuance of an FAA certificate or rating.

Pilot and instructor applicants are tested for final certification by one of three pathways:

1. **For flight training conducted under 14 CFR part 61:** A practical test conducted by an FAA Inspector or Designated Pilot Examiner (DPE) after receiving an endorsement from a certified flight instructor (CFI) attesting the applicant meets the requirements for their certificate or rating. Upon satisfactory completion of the practical test, the DPE issues the temporary certificate.
2. **For flight training conducted at a 14 CFR part 141 pilot school that is not authorized for part 141 examining authority:** The applicant completes an end-of-course test conducted by their pilot school. Upon satisfactory completion of that end-of-course test, the pilot school issues a graduation certificate to the applicant. The student then conducts a practical test conducted by a FAA Inspector or designated pilot examiner

(DPE). The applicant's graduation certificate is used as proof of eligibility and has a 60 day expiration date. Upon satisfactory completion of the practical test, the DPE issues the temporary certificate.

3. **For flight training conducted at a 14 CFR part 141 pilot school that is authorized for part 141 examining authority:** The applicant completes an end-of-course test conducted by their pilot school. Upon satisfactory completion of that end-of-course test, the pilot school issues a graduation certificate to the applicant. An Airmen Certification Representative (ACR), also known as an Admin-PE, issues the temporary certificate without any further testing. A practical test is not required.

Pilot schools are supervised by a Principal Operations Inspector (POI) who is assigned to an FAA Flight Standards District Office (FSDO). FSDOs are challenged with low staffing, high employee turnover, and a high workload involving a wide range of assigned roles and responsibilities. This affects the POIs' availability to work with the part 141 pilot schools and reviewing applications for part 141 examining authority.

According to the FAA, there are 80 FSDOs across the United States covering 77 geographical areas. There are 509 certificated pilot schools under 14 CFR part 141 of which, only 74 (15%) are authorized for part 141 examining authority. Pilot schools who have applied for part 141 examining authority have reported delays in getting a response from their FSDO and delays to the evaluation process for part 141 examining authority.

Currently, the majority of applicants for FAA certificates or ratings utilize practical tests conducted by FAA Inspectors and DPEs. The DPE network across the United States is in high demand. Long wait times and limited availability are the norm. The FAA is addressing this need for more DPEs. Another option to address the demand and alleviate the long wait times and limited availability is to increase the number of part 141 pilot schools that are authorized for part 141 examining authority.

This proposal addresses regulatory and policy guidance to modernize part 141 examining authority processes and procedures while ensuring FAA expectations are met.

Proposed Changes

Eligibility

The current FAA part 141 regulatory framework relies heavily on a quantitative 90% first-time pass rate to grant and maintain examining authority, a metric that often prioritizes statistical outcomes over the systemic integrity of a flight school's training environment. A more robust and safety-oriented approach would shift this eligibility focus toward the qualitative strength of a school's internal policies, the rigor of its check instructor training syllabus, and the standardization of its student evaluation procedures. By anchoring eligibility in these structural pillars, the FAA would ensure that a school's authority is derived from a repeatable, high-standard process rather than a fluctuating percentage that can be influenced by "teaching to the test" or selective student graduation.

Central to this proposed shift is the Chief Flight Instructor, who serves as the vital link between the institution's examining authority and the FAA's oversight. Instead of acting as a mere administrator of pass-rate data, the Chief Flight Instructor should be recognized as the primary guarantor of quality control, responsible for the direct supervision and standardization of the check instructors who exercise this delegated authority. Under this model, the FAA would evaluate the Chief Flight Instructor's ability to implement a rigorous check instructor syllabus, one that ensures every internal evaluator possesses the same level of scrutiny and objective judgment as a DPE (Designated Pilot Examiner). When the emphasis is placed on the Chief Flight Instructor's oversight and the transparency of the school's internal evaluation procedures, the examining authority becomes a reflection of institutional excellence and professional accountability rather than a high-stakes numbers game.

Under the current regulatory environment, the process for a part 141 school to obtain examining authority is often characterized with mismatched actions and interpretations across the FSDO network. To truly ensure safety and standardization, the FAA's eligibility criteria should pivot toward a rigorous evaluation of the check instructor's role within the school's ecosystem. The primary focus of FAA observation should be the check instructor's ability to objectively apply the Airman Certification Standards (ACS) and follow the school's approved evaluation procedures, regardless of the student's specific performance on that day. If a check instructor is properly vetted through a specialized training syllabus and is held to a high standard of accountability by the Chief Flight Instructor, they become a reliable extension of the FAA's own oversight. Shifted in this way, examining authority would be granted based on the

school's ability to produce professional, standardized evaluators who can identify deficiencies, rather than a statistical "win streak" of students who may have simply been trained to pass a specific set of maneuvers.

Importantly, empirical research does not indicate that certification through part 141 examining authority results in inferior safety outcomes. Knecht & Smith (2012) found no statistically significant difference in subsequent safety performance between pilots certificated under part 141 examining authority and those evaluated by Designated Pilot Examiners (DPEs) under part 61. These findings directly challenge the perception that examining authority represents a lesser or higher-risk certification pathway due to the involvement of internal school personnel rather than FAA inspectors or DPEs. When properly structured, supervised, and standardized, school-based evaluators function as an extension of FAA oversight rather than a dilution of it. The evidence suggests that safety outcomes are driven not by who administers the test, but by the strength of institutional quality assurance, evaluator training, and oversight mechanisms. Accordingly, granting examining authority to schools with mature Quality Management Systems should not be viewed as introducing additional risk, but rather as leveraging structured, system-based controls to maintain certification integrity.

The FAA's ability to withhold this authority is limited to instances where a school fails to meet the specific requirements of § 141.63. § 141.9 states that the FAA "issues" examining authority to a school if it meets the requirements of Subpart D. This language implies that while the FAA has oversight, they do not have the discretion to "withhold" the authority if a school demonstrates full compliance with the regulatory and safety standards. Legal interpretations from the FAA have clarified that if a school meets the requirements, the FAA will issue the authority.

While the issuance of examining authority is a mandatory administrative action once a school meets the regulatory criteria, it is legally defined as a privilege, not an indefinite right. Because this authority allows a private entity to perform a function normally reserved for the federal government, the certification of airmen, the FAA maintains strict "quality control" hooks that allow them to rescind this power if the school's training or evaluation standards begin to erode.

Reduced-Time and Combined Courses

The FAA should allow a path to examining authority for reduced-time and combined courses specifically for institutions that have achieved and maintained a tier 2 Quality Management System (QMS) approval. By tying examining authority directly to the QMS, the FAA recognizes that these organizations

possess the internal infrastructure necessary to guarantee student proficiency regardless of legacy flight-time minimums. A tier 2 QMS provides a high-level, data-driven assurance of training quality, encompassing standardized instructor performance, rigorous internal auditing, and continuous safety risk management. Under this model, the "hours in the logbook" metric is superseded by the verified reliability of the school's own oversight systems, allowing the FAA to grant examining authority based on the proven maturity and historical success of the training provider's quality standards.

New Courses

For a flight school already operating under a tier 2 QMS, the process for obtaining examining authority on new courses should be a streamlined extension of their existing approval. Rather than treating a new curriculum as an isolated variable requiring exhaustive external validation, the FAA should leverage the school's established QMS to provide the necessary oversight. To add a new course, the school would submit a validation plan demonstrating that the new curriculum integrates with their existing quality controls and consistently produces graduates meeting Airman Certification Standards (ACS). By utilizing the school's internal data as the primary evidence for proficiency, the FAA can transition toward a systems-based oversight model that reduces the administrative burden on local Flight Standards District Offices (FSDOs) and empowers high-performing schools to implement innovative, high-fidelity training solutions more rapidly.

Ultimately, aligning examining authority with QMS maturity ensures that the highest-performing schools are empowered to lead the industry toward a more efficient and environmentally responsible future. This "trusted partner" approach treats the flight school's internal QMS as the primary engine for quality control, where a statistically significant success rate during an initial provisional period leads to delegated examining authority. This modernization reflects the capabilities of 2026-era simulation and data analytics, ensuring that the next generation of pilots is trained in the most sophisticated environments possible while maintaining the highest levels of safety and regulatory compliance.

Regulatory Clarity

The FAA must codify specific policy and regulatory guidance for the part 141 end-of-course test when conducted by a school with examining authority. Even though the end-of-course test is equivalent in scope to a practical test, there are procedural differences. Some of those procedural differences are not clearly

stated or are spread throughout regulatory and policy guidance complicating understanding. Examples include:

- FAA form 8710 , the airman certificate and/or rating application, is not presented prior to an end-of-course test but it must be presented prior to the practical test.
- The graduation certificate is presented prior to a practical test and not an end-of-course test.
- It is permitted for the oral and flight portion of an end-of-course test to be conducted on separate days.
- At the completion of the practical test the DPE issues the temporary airman certificate but a check instructor conducting an end-of-course test does not.
- The aeronautical experience attained during a practical test is not to be counted towards aeronautical experience requirements for that certificate or rating, whereas the aeronautical experience attained during an end-of-course test does indeed count towards meeting aeronautical experience requirements because the end-of-course test is part of the school's approved course.
- When the applicant is found unsatisfactory during a practical test the DPE issues FAA form 8060 Notice of Disapproval of Application, whereas a check instructor does not and updates the applicants training record.
- When the entire practical test is not conducted on the same day the DPE issues a letter of discontinuance documenting completed tasks. A check instructor does not issue a letter of discontinuance but is required to update the applicant's training record.

Check Instructor Training Requirements

To complete this modernization framework, the FAA should mandate formalized check instructor training and specific end-of-course (EOC) check instructor training programs. Currently, under 14 CFR § 141.37, check instructor qualifications are often met through ad-hoc proficiency checks and knowledge tests administered by the chief instructor, which lacks the standardized, syllabus-driven rigor required for high-stakes evaluations. By establishing a formal, FAA-approved training curriculum for these roles, the agency can ensure that every check instructor is trained not just to fly the maneuvers, but to evaluate them using standardized criteria that align with the school's Quality Management System (QMS). This formalization is especially critical for those authorized to conduct end-of-course tests, as these instructors essentially act as the final gatekeepers for certification. A structured EOC training track would ensure that

evaluations are consistent, objective, and mirror the depth of an FAA practical test, providing the necessary "check on the system" that justifies granting a school tier 2 autonomy and expanded examining authority.

To further bridge the gap between internal school evaluations and the national certification system, the FAA should make its proprietary Designated Pilot Examiner (DPE) training available to all part 141 pilot schools. Currently, there is a distinct disconnect between the standardized training that DPEs receive at the FAA Academy and the often localized, ad-hoc training provided to school check instructors. By granting 141 schools access to the same training modules and evaluation criteria used by the DPE system, the FAA would ensure that Examining Authority (EA) approvals are grounded in the exact same testing standards used by the agency. This alignment would create a uniform "language of evaluation" across the industry, ensuring that a student passing an end-of-course test under a school's EA has been held to the same rigorous scrutiny as if they had taken a practical test with a DPE.

To implement this without overwhelming the FAA's existing training infrastructure, this curriculum should be delivered via electronic means, such as the FAA's existing Safety Standards (AFS) training portals or dedicated e-learning platforms like FAASafety.gov or the SAS External Portal. Providing this training digitally allows for a scalable, self-paced, and cost-effective distribution to thousands of check instructors nationwide without the need for physical travel to Oklahoma City. This digital accessibility would not only alleviate the burden on the current DPE training system but also facilitate real-time updates to the curriculum as Practical Test Standards (PTS) or Airman Certification Standards (ACS) evolve. Making this professional-level evaluator training a requirement for tier 2 QMS schools would provide the ultimate layer of quality assurance, justifying the increased autonomy and trust granted to these high-performing organizations.

Airman Certification Representatives (ACRs)

Finally, the qualifications for Airman Certification Representatives (ACRs) should be updated to reflect organizational management over individual pilot skill. The FAA should remove the requirement for an ACR to have been employed at the school for a year, as well as the mandate that they hold a pilot or instructor certificate. By focusing on the ACR's ability to manage the administrative integrity of the certification process rather than their personal flying credentials, the FAA can broaden the pool of qualified management professionals who can lead a high-performing, tier 2 QMS pilot school.

References

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Recommendation 6: Flight Simulation Training Devices and Technology

The FAA needs to modernize the use of simulation in the current flight training environment.

Applicable Regulations

- § 141.41 Flight Simulation Training Devices (FSTDs), training aids, and equipment.
- § 141.52 Pilot Training Management Manual (PTMM)
- § 141.69 Prerequisites, Process, and Procedures for an End-of-Course Test
- § 141.79 Flight Training

Current Situation

The current regulations governing flight simulation training devices (FSTDs) in 14 CFR Part 141 pilot schools are widely considered outdated because they are still structurally rooted in the Civil Air Regulations (CAR) of the 1940s and a 1997 revision that predates the explosion of high-fidelity, low-cost simulation technology. While modern Aviation Training Devices (ATDs) can now replicate complex aircraft systems and GPS environments with extreme precision.

To understand the current situation of how these rules have evolved, one must look at two pivotal regulatory actions that attempted to bridge the gap between old law and new tech:

- 79 FR 20 (January 2, 2014): This Federal Register document, titled "Notice of Policy Change for the Use of FAA Approved Training Devices," actually highlighted the "outdated" problem by creating a crisis. For years, the FAA had been issuing Letters of Authorization (LOAs) that allowed schools to log more simulator time than the actual regulations permitted. In 2014, the FAA admitted it could not legally use LOAs to bypass the strict text of the CFR and "reset" the limits to just 10 hours for instrument ratings and a 10% cap for Part 141 courses. This forced the industry to confront the fact that the 1997 regulations were no longer compatible with modern training needs, leading to a massive push for the subsequent rule changes.
- 81 FR 21460 / 82 FR context (2016–2017): In response to 79 FR 20, the FAA issued a Final Rule (Aviation Training Device Credit for Pilot Certification) and subsequent updates (including the NPRMs and rules

cited in 2017/2018 like 83 FR 30214). These changes provided the simulator credits schools currently operate under today: they increased the maximum credit for an instrument rating from 10 hours to 20 hours in an Advanced ATD (AATD) and allowed Part 141 schools to credit up to 40% of their total course hours in an ATD. These documents represent the first major step in admitting that simulation technology had outpaced the 1997 rulebook, though industry leaders argue they didn't go far enough to solve the foundational "outdated" nature of Part 141 itself.

Today, the industry has seen an explosion in high-fidelity Flight Simulation Training Devices (FSTDs), immersive Virtual Reality (VR), and Augmented Reality (AR) systems that can replicate complex emergency scenarios, flight deck environments, and environmental conditions with startling accuracy. Despite these advancements, the existing regulations often impose arbitrary "caps" on simulated hours that do not account for the superior instructional value of modern simulation. This outdated framework forces schools to prioritize flight time over quality time, ignoring the fact that modern simulation allows for the pausing of maneuvers, instant repositioning, and the safe execution of high-risk scenarios that are impossible to replicate in a live flight deck.

To address the rising costs of flight training, the Federal Register document 81 FR 21453 (published April 15, 2016) was a landmark ruling titled *"Aviation Training Device Credit for Pilot Certification."* It addressed the rising costs of flight training by significantly increasing the amount of time a student could spend in a simulator, which is dramatically cheaper than an aircraft, while still counting that time toward their FAA certificate or rating.

The current regulatory language fails to distinguish between different levels of simulation technology, often grouping modern, make and model specific devices with generic devices that lack the same instructional depth. As a result, the FAA is missing an opportunity to leverage technology to reduce the cost of flight training and improve safety outcomes.

Recommended Changes

Enhanced Advanced Aviation Training Device (EAATD)

The FAA has a historic opportunity to modernize part 141 programs by embracing the exponential leap in simulation technology, moving past legacy regulations that no longer reflect the capabilities of modern hardware. Currently, the approval for an Advanced Aviation Training Device (AATD) is far too broad; it

encompasses everything from introductory level basic generic cockpit layouts and limited visuals, to sophisticated, high-fidelity trainers within a category and class, knob for knob accuracy, with wrap-around visuals or VR. This "one-size-fits-all" approach fails to distinguish between devices with limited utility and those that offer genuine instructional depth. To address this, the FAA should introduce a new Enhanced AATD (EAATD) category. This category would mandate modern fidelity standards, such as a 210° Field-of-View (FOV) visual system and a representative flight deck layout that mirrors a specific aircraft make and model, not just category and class. Crucially, the EAATD would be comparable in training value to a current FTD Level 5, but the administrative burden would be shifted: similar to the current AATD's, the device would come with a pre-certified Letter of Authorization (LOA) from the FAA. This would allow schools to integrate these high-fidelity devices immediately into their curriculum without the lengthy approval process that currently stymies technology adoption.

The regulatory logic behind requiring an Enhanced Advanced Aviation Training Device (EAATD) or standard AATD to be certified as "make and model specific" while allowing its use for general "category and class" credit is rooted in the balance between technical fidelity and training flexibility. To receive an FAA Letter of Authorization (LOA), a manufacturer must prove the device accurately replicates a specific cockpit environment, such as a G1000-equipped Cessna 172S, including the approximate physical layout of switches, the aerodynamic performance of that specific airframe, and the exact functional logic of its avionics. This "make and model" certification ensures that the student is developing precise muscle memory and procedural habits that are transferable to a real aircraft, preventing the "negative transfer of learning" that can occur in generic, non-specific trainers. By mandating a specific aircraft model for the hardware certification, the FAA guarantees a baseline level of high-fidelity simulation that justifies the significant training credits granted to these devices.

However, once the device is certified, the part 61 regulations for logging flight time are written more broadly, focusing on the category and class (e.g., Airplane Single-Engine Land) rather than the specific tail number or model. Because the core maneuvers required for a certificate or rating, such as steep turns, holding patterns, or tracking a localizer, are fundamental to the category and class of aircraft, the FAA allows the training to apply to the student's overall experience requirements. For example, a student can log time toward an Instrument Rating in a Piper Archer-specific EAATD even if they intend to take their checkride in a Cessna 182, because the fundamental instrument skills and the "Airplane Single-Engine" category requirements remain consistent across both platforms. This distinction allows flight schools to use a single, high-quality simulator to

serve a diverse fleet of training aircraft, provided the device has met the rigorous engineering hurdles of its specific make-and-model certification.

Extended Reality (XR)

Furthermore, the FAA should formally integrate Extended Reality (XR) into the part 141 framework, acknowledging its unique ability to provide immersive, 360-degree situational awareness that traditional "panel-only" simulators cannot match. XR includes Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) technologies. VR is particularly effective for ground-reference maneuvers, traffic patterns, and emergency procedures where "looking out the window" is the primary learning objective. To encourage adoption while maintaining safety, the FAA should align XR credit allowances similarly to the credit allowed for Basic Aviation Training Device (BATD) standards. This would provide a low-cost, high-impact entry point for schools to utilize immersive technology for foundational skills. By creating a clear hierarchy, from XR and BATDs for basic procedures to EAATDs for advanced flight training, the FAA can foster a training environment where technology is utilized to its maximum pedagogical potential, ensuring students are better prepared for the complexities of modern aviation while simultaneously reducing the financial barrier to entry.

Proposed Simulator Credit

Device	Sport	PVT	IFR	COMM	ATP	CFI	Add CFI Class	CFII	Add Cat	Type	Pilot Refresh
FFS	40%	65%	80%	50%	100%	80%	80%	100%	50%	100%	100%
FTD 6/7	35%	60%	70%	45%	80%	60%	60%	100%	45%	80%	80%
EAATD / FTD L5 (visual)	30%	50%	60%	40%	45%	50%	50%	80%	40%	60%	60%
AATD	20%	25%	40%	30%	25%	35%	35%	50%	30%	25%	25%
BATD	10%	15%	25%	15%	15%	15%	15%	20%	15%	15%	15%
XR	5%	10%	15%	15%	15%	15%	15%	10%	15%	15%	15%
Max Combined (non-FFS)	30%	65%	80%	50%	100%	80%	80%	100%	50%	100%	100%

Adding Tasks/Maneuvers to an Existing Letter of Authorization (LOA) and XR Device Approvals

To modernize the integration of technology in pilot training, the FAA should establish a standardized, performance-based pathway that allows 141 pilot schools to expand an Aviation Training Device's (ATD) Letter of Authorization (LOA) and approve emerging extended reality (XR) training devices based on demonstrated capability rather than broad device classification.

Under the current regulatory structure, a clear distinction exists between how higher-level simulation devices and ATDs are evaluated. 14 CFR Part 60 provides a structured, performance-based framework for qualifying Full Flight Simulators (FFSs) and Flight Training Devices (FTDs), including defined Qualification Performance Standards (QPS). As part of this framework, the FAA utilizes qualification documents such as the Statement of Qualification (SOQ) and T001/T001A forms, which allow sponsors to request and receive approval for additional maneuvers, procedures, tasks, and functions beyond those initially qualified. However, no equivalent framework exists for Aviation Training Devices (BATDs and AATDs) or emerging XR-based training systems.

Instead, ATDs are authorized through a Letter of Authorization (LOA) and Qualification and Approval Guide (QAG), with their use governed by AC 61-136B. Under 14CFR Part 60, a 141 flight school may seek qualification for additional maneuvers, procedures, tasks, and functions for FTDs. A similar process should be implemented as part of a revision to Advisory Circular AC 61-136B allowing 141 flight schools to seek additional tasks as well as qualification stemming from emerging XR-based training systems. This process should function as an ATD/XR equivalent to the T001A mechanism, allowing expansion of approved tasks throughout the operational life of the device based on demonstrated performance.

For Part 141 operations, approval of how the device is used within a curriculum is currently determined through local inspector oversight. As a result, authorization of specific tasks, maneuvers, and emerging device types is dependent on local interpretation rather than a standardized FAA-wide evaluation process.

This decentralized approach becomes increasingly problematic as simulation technology evolves. Improvements in visual systems, avionics integration, and immersive XR environments now allow devices to support training tasks that were previously limited to higher-level simulators. However, there is no consistent national process for evaluating and approving these capabilities.

Centralized Task and Device Approval Process

Under the proposed oversight structure, the Central Management Office (CMO) is responsible for approving or denying:

- Additional tasks and maneuvers associated with an ATD's LOA
- The use of XR-based training devices and environments for specific training applications

FSDO inspectors support this process in an evaluation role. They do not approve device capability, but instead:

- Observe device performance in the operational training environment
- Validate that the device performs as described in the device effectiveness report submitted by the requesting pilot school.
- Assess training realism and operational suitability
- Document findings and provide a formal evaluation to the CMO

These evaluations should be conducted in coordination with the FAA Training and Simulation Group (TSG), consistent with current practices for Part 60 device qualification, to ensure technical standardization and alignment with national simulation policy.

This approach removes the need for local approval of device capability while preserving field-level insight into how the device performs in practice.

Device Effectiveness Report and XR Approval Process

When a flight school seeks to expand LOA authority or introduce an XR-based training device, it submits a standardized Device Effectiveness Report (sample report below) to the Central Management Office (CMO) for evaluation. This report serves as the functional equivalent of the T001A request process for ATDs and XR devices.

The Device Effectiveness Report must be developed for each specific task or maneuver requested for approval and must document the device's capability to support that task at the required level of fidelity and training effectiveness.

Unlike Part 60-qualified simulators, Aviation Training Devices (AATDs and BATDs) exhibit significant variability in configuration and capability, including differences in:

- Visual systems and display fidelity

- Visual databases and airport modeling
- Field-of-view and depth perception
- Cockpit layout and avionics configuration
- Control loading and system responsiveness

This variability is further amplified in XR-based systems, where the training environment may depend on head-mounted displays, synthetic visual overlays, and software-driven representations of the flight deck and external environment.

As a result, these devices cannot be evaluated as a single, uniform category, and approval of additional tasks cannot rely on device classification alone. Each device configuration, and particularly each XR implementation, must be independently evaluated and validated for each requested task or maneuver to ensure that it provides an appropriate level of realism and supports effective transfer of training.

Accordingly, each Device Effectiveness Report includes:

- A description of the device configuration, including avionics, systems modeling, visual systems, and XR components where applicable
- Demonstration of the operational and perceptual requirements of the specific task or maneuver.
- A structured subjective evaluation conducted by a qualified standardization pilot
- Identification of any limitations, restrictions, or conditions for use

Upon submission, the CMO conducts an initial review of the Device Effectiveness Report to ensure completeness and suitability for evaluation. See appendix G for an example report.

A designated FSDO inspector then conducts an operational evaluation of the device in the training environment. During this evaluation, the inspector:

- Observes device performance during representative scenarios for the specific task or maneuver
- Assesses realism, workload, and operational suitability
- Evaluates whether the device supports proper decision-making and procedural execution
- Documents observations, discrepancies, and overall performance

The inspector's evaluation is submitted to the CMO as a formal validation input.

The CMO uses the inspector's evaluation, in conjunction with the submitted Device Effectiveness Report, to validate the device's capability for the specific task or maneuver and determine whether approval should be granted. The CMO retains final authority to approve, deny, or apply limitations to each requested task.

Once approved, the authorization is applied at the task level for that specific device configuration and may be standardized across all operators using that configuration, eliminating the need for repeated local interpretation while ensuring that training effectiveness is maintained.

Application Example

A maneuver such as an instrument approach with a circle-to-land has traditionally been associated with higher-level devices such as FTDs and FFSs. However, advancements in simulation fidelity, particularly in visual systems and XR-based environments, now allow certain ATDs and XR platforms to replicate the operational conditions required for this maneuver.

Under the current system, approval for such use may vary depending on local interpretation. Under the centralized model, the FAA evaluates the maneuver once based on demonstrated capability and applies that authorization consistently across all pilot schools (if appropriate).

This framework:

- Standardizes LOA expansion and XR device approvals across all regions
- Eliminates variability caused by local interpretation
- Aligns ATD and XR evaluation with the performance-based philosophy of Part 60
- Introduces a T001A-equivalent process for ATDs and XR devices
- Preserves the role of field inspectors in evaluation without assigning them approval authority

By separating evaluation (FSDO) from approval (CMO), the FAA can ensure consistent, scalable, and defensible integration of evolving training technologies.

Update the FSTD Definition

The FAA should adopt a new definition for FSTD in **14 CFR § 1.1** and **§ 60.3**. This would further align the FAA with the ICAO Doc 9625 which has a single simulator classification.

Flight Simulation Training Device (FSTD): A device used for aircraft flight training, testing, or checking that is a Full Flight Simulator (FFS), a Flight Training Device (FTD), an Aviation Training Device (ATD), Enhanced Advanced Aviation Training Device (EAATD), and Extended Reality (XR).

- **Note:** FFS and FTD levels remain qualified under the technical standards of Part 60.
- **Note:** ATDs (Basic and Advanced), EAATD, and XR remain qualified under the functional standards of Part 61 and applicable Advisory Circulars.

Additional Benefits

The modernization of FSTD credit limits represents a significant advancement in the public interest, aligning aviation training with contemporary environmental and economic goals. By allowing high-fidelity Flight Simulation Training Devices (FSTDs) to account for a larger portion of pilot certification, the industry can drastically reduce its carbon footprint. Traditional flight training relies on the combustion of leaded or high-octane aviation fuels; however, shifting a substantial portion of these hours to simulator-based and electrically powered training devices can reduce CO₂ emissions by up to approximately 70% depending on the source of electrical power for the FSTD (Maciejewska et al., 2024). This transition directly supports global sustainability initiatives and helps mitigate the long-term environmental impacts associated with aviation exhaust emissions.

Beyond emissions, the public benefits from a significant reduction in noise pollution. Training flights often require repetitive patterns, such as takeoffs, landings, and low-altitude maneuvers, that frequently occur over residential communities surrounding flight schools. Modernizing credit limits allows these high-frequency repetitions to take place in a silent, virtual environment, preserving the quality of life for local residents and reducing the "noise annoyance" that often leads to community friction and health concerns. This reduction in noise will also provide an additional efficiency within the Flight Standard District Offices (FSDOs) with the reduction in noise complaints. Furthermore, every hour logged in a simulator is an hour not spent on an airframe, which decreases engine wear and the overall maintenance burden. This ensures that the active training fleet remains in peak mechanical condition for the essential hours spent in the air, reducing the risk of mechanical failures during critical flight phases.

From an economic perspective, increased simulator utilization is a powerful tool for democratizing pilot training. The cost of operating a high-fidelity FSTD is a fraction of the expense required for aircraft rental, fuel, and insurance. By lowering the overall cost of training, the aviation industry can attract a more diverse pool of candidates, addressing the global pilot shortage without creating prohibitive financial barriers. Additionally, training efficiency is greatly improved through the ability to pause, rewind, and repeat complex scenarios instantly. In a simulator, a student can practice ten instrument approaches in the time it would take to fly two in an aircraft, allowing for faster skill acquisition and better "muscle memory" development.

Crucially, these benefits are achieved without compromising safety; in many cases, safety is actually enhanced. High-fidelity devices allow pilots to train for "black swan" events, such as total engine failure, severe icing, or complex system malfunctions, that are too dangerous to replicate in a real aircraft. This prepares pilots for high-stress, unpredictable scenarios in a controlled environment, ensuring they possess the decision-making skills required for real-world emergencies. As simulation technology now accurately replicates aerodynamic envelopes and stall/spin characteristics, the regulatory shift to increase credit limits ensures that the next generation of pilots is better prepared, more efficiently trained, and more environmentally responsible than ever before.

Modern Research Supporting Increased FSTD Credit

The foundational modern study on high-fidelity Flight Training Device (FTD) transfer, conducted by Macchiarella, Arban, and Doherty in 2006, examined private pilot training under FAR part 142 using a Level 6 FTD with approximately 60% simulator integration. This research demonstrated statistically significant, measurable positive transfer from the FTD to the aircraft in primary flight tasks, specifically showing positive transfer in 33 of 34 evaluated tasks. It also showed statistically significant reductions in aircraft task iterations, meaning that less time was needed in the aircraft to achieve proficiency when training was conducted first in a high-fidelity FTD. The study established proof that a curriculum integration level approaching or exceeding 60% of FTD use is pedagogically viable and reduces aircraft time without degrading performance.

Because these empirical results were achieved using 2006-era technology, the argument for increasing allowable simulator credit is even more compelling today. Over the last two decades, simulation technology has advanced significantly, introducing high-resolution, wide-field, and collimated visual systems, immersive VR-based displays, and high-fidelity control feedback. Modern systems also

benefit from significantly improved advanced avionics emulation for glass cockpit systems, reduced latency through enhanced computing power, and improved instructor station capabilities. Given that measurable positive transfer was already proven with outdated technology, the regulatory conclusion should evolve accordingly; simulator credits should increase rather than remain fixed at legacy limits based on earlier technological assumptions.

In addition to the previous landmark study, research consistently demonstrates that simulator-based training produces meaningful improvements in pilot proficiency while substantially reducing the aircraft hours required for certification. Students enrolled in an intensive simulator-based program earned FAA Private Pilot certificates in approximately 39% fewer aircraft hours than their conventionally trained counterparts, (Lubner et al., 2015). Similarly, a study of 61 ab-initio pilots found that simulator training led to significantly improved aircraft performance, with a strong positive correlation between simulator and actual flight outcomes and no evidence of negative transfer, even across different flight deck configurations and flight dynamic models (Koglbauer et al., 2016). Further reinforcing these findings, beginning-level instrument pilots trained in either VR or PC-based simulators significantly outperformed a no-training control group (Guthridge & Clinton-Lisell, 2023).

Beyond individual training outcomes, broader literature supports a systemic shift toward greater simulator credit across all device categories. The relationship between simulation fidelity and training transfer has been shown on every fidelity level across multiple studies (Liu et al., 2023). Additionally, the research community continues to show the advantages of VR simulation in pilot training through increased safety, reduced costs, and improved environmental sustainability (Marron et al., 2024).

Combined, these findings present a strong empirical basis for increasing the allowable percentage of aeronautical experience completed in simulation environments and that tiered credit increases across all FSTD categories are necessary rather than restricting expanded credit to the highest-fidelity platforms alone.

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Recommendation 7: Courses and Appendix

The FAA should make modifications to existing appendices and implement the addition of several new appendices to create a more resilient and modern part 141 regulatory framework.

Applicable Regulations

§ 141.9 Examining authority privileges

§ 141.11 Pilot school ratings

Appendix A to Part 141- Sport Pilot Course

Appendix B to Part 141- Private Pilot Course

Appendix C to Part 141- Instrument Rating Course

Appendix D to Part 141- Commercial Pilot Course

Appendix E to Part 141- Airline Transport Pilot Course

Appendix F to Part 141- Flight Instructor Course

Appendix G to Part 141- Flight Instructor Additional Class Rating Course

Appendix H to Part 141- Flight Instructor Instrument Course

Appendix I to Part 141- Ground Instructor Course

Appendix J to Part 141- Additional Aircraft Category and/or Class Rating Course

Appendix K to Part 141- Aircraft Type Rating Course, For Other Than an Airline
Transport Pilot Certificate

Appendix L to Part 141- Special Preparation Courses

Appendix M to Part 141- Pilot Ground School Course

Appendix N to Part 141- Combined Private Pilot and Instrument Rating Course

Appendix O to Part 141- Professional Pilot Track

Appendix P to Part 141- Airline Transport Pilot Certification Training Program
(ATP CTP)

Appendix Q to Part 141- Enhanced Qualification Program (EQP) Phase I- ATP
Preparation Course

Appendix R to Part 141- Consensus Standard-Developed Training Courses

Current Situation

The existing FAA part 141 appendices, which serve as the regulatory blueprints for specific training courses, have become increasingly outdated and often counterproductive to their original intent. While part 141 was designed to provide a more structured and efficient path to certification than part 61, many of the current appendix requirements are paradoxically more restrictive than their part 61 counterparts. This regulatory "penalty" for choosing a structured environment

disincentivizes flight schools from seeking part 141 approval, as they can often provide the same training under part 61 with significantly less administrative overhead and greater operational flexibility. By failing to modernize these appendices to reflect contemporary instructional capabilities and technology, the FAA is inadvertently pushing the industry away from the very data-driven, supervised training environment that part 141 was intended to foster.

Proposed Changes

Current Appendix Changes

To modernize the training requirements within the part 141 framework, the FAA should implement a series of targeted updates to the individual appendices that remove redundant mandates and align hour requirements with modern operational logic. Specific examples include that the cross-country requirements should be removed from Appendix I, as candidates seeking an additional class rating have already met extensive cross-country standards during their prerequisite certifications. Additionally, the flight hour requirements for additional flight instructor class ratings, such as the Multi-Engine Instructor (MEI), should be reduced from 25 hours to 15 hours. This reduction acknowledges that a candidate who is already a certificated flight instructor does not require the same volume of flight time to master an add-on rating. Furthermore, the FAA should amend Appendix D to allow the 10-hour solo requirement to be met through any combination of purely solo flight and flight time performing the duties of PIC with an instructor on board. Currently, the "all-or-nothing" approach adds unnecessary complexity, often resulting in errors by the school, instructors, and students. Finally, the FAA should reduce the requirement in the Commercial Pilot appendix that mandates night solo flights must include 10 takeoffs and landings at an airport with an operating control tower, as this legacy rule creates significant logistical hurdles for rural schools and increases pilot fatigue by forcing long-distance flights just to find a tower that remains open. The listing of specific required tasks should be removed from each appendix and be replaced by a reference to the appropriate Airman Certification Standards (ACS). The appendices should also be updated to allow instrument training to be completed in instrument meteorological conditions or using a view limiting device, or any combination thereof. Additionally, the creditable percentages of FSTD time allowed in each appendix should also be updated in each appendix. Lastly, all appendices should include language that will allow them to be modernized in the future through the use of consensus standards.

The necessity of these revisions is underscored by the fact that many of these part 141 requirements are often far more restrictive than their part 61 counterparts, which creates a regulatory environment where schools are effectively penalized for choosing a structured path. Under part 61, there is no specific minimum flight time mandated for an additional class CFI rating, and additional class commercial ratings have no time or cross-country requirements. By maintaining these overly rigid appendices, the FAA disincentivizes the industry from utilizing part 141 regulations, as the "cost" of the additional 10 hours for a MEI does not provide a demonstrable safety increase. Modernizing these appendices would remove the "regulatory penalty" that currently exists in some appendices and encourage schools to remain within the structured, data-monitored environment of part 141, ensuring the regulations reflect contemporary operational efficiency rather than arbitrary legacy standards.

New Appendix: Professional Pilot Track

The FAA should implement a new appendix establishing a Professional Pilot Track in the airplane category, designed to develop professional aviators through an integrated, structured progression of training consistent with airline and corporate operational standards.

Rather than treating the Private Pilot, Instrument Rating, and Commercial Pilot certificates as isolated courses with rigid and independent minimum hours, this appendix would treat the entire progression as a cohesive professional curriculum while still preserving each required certification course as a distinct approval.

The Professional Pilot Track would require completion of the following separate FAA-approved courses:

- Private Pilot course,
- Instrument course,
- Commercial Initial (Single-Engine or Multi-Engine) course, and
- Commercial additional class rating (Single-Engine or Multi-Engine) course.

The program would require a minimum of 200 total flight training hours across all courses within the Track and still maintain minimum hours and requirements for each certificate and rating.

Integrated Hour Structure

Under this model, an approved school would retain each certificate or rating as a separate course for approval and graduation purposes; however, the appendix would allow flexibility in how the required 200 total flight hours are distributed across the courses within the Track.

Rather than being constrained by legacy minimums tied to each certificate and rating in isolation, the school could allocate training hours strategically among the four courses, provided:

- All applicable ACS requirements are met for each certificate or rating;
- All aeronautical experience requirements for certification eligibility are satisfied; and
- The total flight training across the Track equals or exceeds 200 hours.

For example, a school might allocate:

- 80 hours to the Private Pilot course,
- 45 hours to the Instrument course,
- 55 hours to the Commercial initial course, and
- 20 hours to the Commercial add-on (single or multi-engine) course.

This structure preserves the integrity of each certificate while allowing the Track to function as a professionally sequenced continuum rather than four unrelated training silos.

Transfer Procedures

A school can transfer a student into their professional pilot track from another school's professional pilot track provided:

- The student was previously enrolled in a professional pilot track;
- The student graduated from a course within the previous school's professional pilot track;
- The student received a pilot certificate or rating from the professional pilot track graduation; and
- The student begins a new course at the receiving school.

Example: A student is eligible for transfer from school A to school B if the student was enrolled in school A's Professional Pilot Track and completed the Private Pilot course within school A's Professional Pilot Track. The student could then enroll in the Instrument course within school B's Professional Pilot Track.

A Student would not be eligible for enrollment in school B's Instrument Course within the Professional Pilot Track if the student was not enrolled in school A's Professional Pilot Track, even if the course was a 141 approved Private Pilot course.

Note: Due to the potential for two schools to have differing hour allocations, the student must have a minimum of 200 hours at the completion of the receiving school's Professional Pilot Track. The student is also required to comply with the hour allocations for the receiving school's Professional Pilot Track. It is possible for the minimum course hours within the Professional Pilot Track to result in more than 200 hours total experience.

Alignment with the ACT ARC P3 Working Group Report

The proposed Professional Pilot Track aligns directly with the findings and some recommendations of the Air Carrier Training Aviation Rulemaking Committee's Pipeline, Pathways & Partnerships (P3) Working Group Report submitted to the FAA. The P3 WG explicitly identified the need for an additional regulatory pathway that:

Enhances the pilot training experience, producing pilots with a "higher degree of advanced aviation knowledge and skill" suitable for entry into commercial aviation;

Includes standards above and beyond current part 141 minimums, including expanded curriculum and professional competencies; and

Ensures that such a pathway aligns with industry expectations and does not undermine existing pathways.

The P3 WG recognized that any new pathway must prepare pilots with foundational knowledge and skills important for success in airline qualification training and throughout their professional careers, exactly the objective of this integrated 200-hour Professional Pilot Track. The emphasis on Industry Advisory Boards (IABs), enhanced curriculum content, and elevated professional competencies reflects the P3 WG's recommendation that training pathways incorporate industry-aligned standards and quality benchmarks.

Mandatory Industry Advisory Board (IAB)

Each Professional Pilot Track Program would be required to maintain an Industry Advisory Board (IAB) to ensure alignment with current airline and corporate aviation standards.

The IAB must:

- Include representatives from airlines, corporate operators, manufacturers, maintenance organizations, professional associations, and may include employed graduates;
- Meet at least annually;
- Review trends in operations, safety, automation, and technology;
- Provide structured feedback on graduate preparedness; and
- Recommend curriculum, instructional, and assessment enhancements.

The school must document meetings, record feedback, and formally evaluate and incorporate appropriate recommendations during each curriculum revision cycle. Records must be retained and available for FAA review.

This requirement embeds industry alignment and continuous improvement directly into the regulatory structure of the Track.

Additional Professional Pilot Competencies

In addition to meeting all applicable ACS standards for each certificate and rating, the Professional Pilot Track must incorporate enhanced professional competencies reflective of airline and corporate operations. These competencies must be integrated across the four separate courses and may include:

- Advanced automation management and mode awareness
- Structured single-pilot and crew resource management
- Scenario-based operational decision-making
- Risk management embedded in real-world operational contexts
- SOP adherence and checklist discipline
- Professional communications and ATC interaction standards
- Abnormal systems management beyond minimum ACS tolerances
- Multi-engine professionalism and systems integration in the add-on course
- These professional tasks are not intended to replace ACS requirements but to elevate performance expectations to a professional operational level.

The intent of this appendix is not to lower standards but to modernize structure. By preserving separate course approvals for Private, Instrument, Commercial Single-Engine, and Commercial Multi-Engine Add-On, while integrating them into a unified 200-hour Professional Pilot Track, with required Industry Advisory Board oversight and enhanced professional competencies consistent with the ACT ARC

P3 Working Group's recommendations, the FAA would create a clear regulatory pathway for outcome-focused, industry-aligned professional pilot development.

Combined Appendices

The FAA should modify part 141 regulations to allow for the combination of multiple training appendices into a single, integrated course of training, provided that all ground and flight requirements from the respective appendices are satisfied. Currently, schools are often forced to maintain separate Training Course Outlines (TCOs) for overlapping ratings, such as the Commercial Pilot (Appendix D) and Instrument Rating (Appendix C), even when they are being taught concurrently to the same student. By permitting these appendices to be merged into a single syllabus, schools can eliminate redundant stage checks and administrative filings, creating a more seamless "building block" progression of learning. This integration allows for a more logical flow of maneuvers and knowledge areas, reducing the total training time lost to repetitive review and fragmented record-keeping.

Beyond school-level efficiency, this change would significantly reduce the burden on the already stressed pilot testing system. Under the current siloed structure, a student might require two or three separate practical tests with a Designated Pilot Examiner (DPE) to earn a series of ratings. An integrated course would allow for a more streamlined evaluation process, potentially combining multiple certification tasks into a single, comprehensive check ride or an efficient series of progressive evaluations. This reduces the number of individual appointments a school must coordinate with the DPE network and the FAA, effectively increasing examiner availability for the broader aviation community. By moving away from a "one appendix, one course" mentality, the FAA can support a more flexible, modern training environment that prioritizes total pilot proficiency over administrative compartmentalization.

Reduced-Time Courses

The recommendation is to establish a rule permitting approval of reduced-time training courses across all applicable part 141 appendices for high-performing tier 2 Quality Management System (QMS) approved pilot schools, after sufficient objective evidence demonstrates that reduced-time applicants maintain equivalent levels of safety, quality, and proficiency.

The proposed Reduced-Time Authority rule allows reduction only of the total training time requirement specified in the applicable appendix, while preserving all required instructional elements, including:

- Required dual instruction hours;
- Required solo or pilot-in-command (PIC) duty hours;
- All subject areas and curriculum elements;
- All stage checks and end-of-course evaluations; and
- All knowledge, skill, and proficiency standards.

The rule would apply uniformly across certification and rating courses listed in Appendixes A through R, provided the school:

- Qualifies for and maintains examining authority under § 141.55(e);
- Operates under a documented, functioning tier 2 QMS in compliance with § 141.83(b)(2); and
- Provides objective, data-supported evidence that reduced-time applicants demonstrate safety, check ride performance, and proficiency outcomes equivalent to or exceeding those achieved under the standard minimum time requirements.

Commercial Pilot training under Appendix D provides a clear illustration of the issue. Appendix D currently requires 55 hours of dual instruction and 10 hours of solo or duties-of-PIC training, 65 hours of defined instructional activity, yet requires a total course time of 120 hours. In practice, the additional hours often function primarily as time accumulation rather than structured curriculum aligned with measurable performance objectives. Similar structural dynamics exist in other appendices.

Current data from high-performing part 141 schools completing commercial training at reduced time (without examining authority) demonstrates that thousands of applicants consistently achieve:

- Equivalent or improved first-time practical test pass rates;
- Comparable stage-check performance metrics;
- No statistically significant degradation in safety outcomes; and
- Equivalent examiner-assessed proficiency results.

These findings indicate that, once required instructional elements of the course are satisfied and proficiency is demonstrated, additional total time beyond structured curriculum requirements does not necessarily improve safety or competency.

The proposed rule modernizes part 141 by shifting regulatory emphasis from arbitrary total-hour accumulation to demonstrated performance of a school validated through continuous quality oversight. Reduced-time authority would be earned through measurable performance and sustained institutional effectiveness, not presumed through fixed hour thresholds.

By codifying a standardized reduced-time pathway for qualified QMS-approved schools, the FAA would:

- Reduce unnecessary cost and time-building burden for students;
- Maintain safety and training quality through data-based validation;
- Provide consistent national policy guidance for CMO approval decisions; and
- Align training regulation with modern performance-based oversight practices.

Reduced-time authority would therefore apply across appendices, based on performance and system integrity, while preserving all core instructional and proficiency standards.

New Appendix: Certificated Flight Instructor Additional Class

The creation of a distinct regulatory structure for adding an additional class rating to an existing Flight Instructor certificate appropriately recognizes that an add-on rating is fundamentally different from earning an initial instructor certificate. For example, a Multiengine Instructor (MEI) rating currently requires 25 hours of flight training because it is governed under the initial CFI appendix, even though the applicant has already demonstrated instructional competence and holds a valid instructor certificate. An additional class rating should focus specifically on the incremental knowledge and skill required for that aircraft class, rather than duplicating foundational instructor training. A modernized structure that requires defined ground instruction aligned with the applicable Airman Certification Standards, along with focused flight training on the required areas of operation, preserves safety and quality while eliminating unnecessary repetition. By tailoring training to the actual competencies needed for the additional rating, and allowing appropriate, FAA-authorized simulator credit where applicable, the regulation maintains instructional rigor while removing legacy hour requirements that do not directly contribute to improved proficiency.

New Appendix: The Airline Transport Pilot Certification Training Program (ATP-CTP)

The Airline Transport Pilot Certification Training Program (ATP-CTP) should be removed from the Special Curriculum appendix and established as its own dedicated appendix within part 141. ATP-CTP is a nationally standardized, high-impact program that serves as the final academic and simulator-based bridge to the Airline Transport Pilot certificate. Its scope, instructional intensity, simulator requirements, and national workforce implications distinguish it from other special-purpose curricula. Housing ATP-CTP within a generic special curriculum appendix diminishes its structural importance and creates ambiguity in oversight and standardization. Establishing a standalone appendix would provide clearer regulatory alignment, strengthen national consistency, formally recognize the program's reliance on advanced simulation, and allow future modernization without being constrained by unrelated special curriculum provisions. This change would elevate ATP-CTP to its proper regulatory stature while improving clarity, governance, and long-term policy stability.

New Appendix: Airline Transport Pilot Enhanced Qualification Program (EQP)

As directed by Section 372 of the FAA Reauthorization Act of 2024 ([Public Law 118-63](#)) the FAA has been mandated to develop a new Enhanced Qualification Program (EQP). The Enhanced Qualification Program (EQP) requires various stages of training; the law allows the first stage to be completed under part 141 or 142. The intent of EQP is to modernize pilot training by creating a more structured, airline-oriented bridge for pilots transitioning from any flight school to the flight deck. Mandated by the FAA Reauthorization Act of 2024, the EQP is designed to be a high-standard, data-driven training pathway that qualifies pilots for a Restricted Airline Transport Pilot (R-ATP) certificate with reduced hours, similar to the pathways currently available to military and university graduates.

The Enhanced Qualification Program (EQP) should be recognized as a distinct appendix within part 141 because it was expressly directed by Congress in the most recent FAA reauthorization legislation. EQP is not merely an administrative refinement of existing training policy; it represents a Congressionally mandated framework designed to enhance preparation for Airline Transport Pilot certification and advanced air carrier operations. The program establishes elevated entry screening standards, 180 hours of advanced aeronautical knowledge instruction, required high-fidelity simulation, including Level C or higher full flight simulator time, and competency-based evaluation aligned with ATP-level operational expectations. This legislative direction reflects Congress's

intent to strengthen the professional pilot pipeline through structured, performance-based preparation rather than incremental adjustments to legacy curricula. Given its statutory origin, national workforce implications, and reliance on advanced simulation and screening methodologies, EQP warrants clear regulatory positioning within part 141 to preserve fidelity to Congressional intent while enabling consistent oversight and future modernization.

New Appendix: Consensus Standard Developed Courses

The Consensus Standard–Developed Training Courses appendix establishes a structured pathway for modernizing part 141 through performance-based, industry-developed standards while preserving FAA oversight and safety authority. Rather than relying solely on prescriptive regulatory appendices that can be slow to evolve, this framework allows recognized consensus standards development organizations to design competency-based curricula aligned with current operational realities, emerging technologies, and advanced training methodologies. By requiring openness, balanced industry representation, measurable performance standards, defined safety risk assessments, and integration with approved Quality Management Systems under § 141.83, the appendix ensures that innovation does not outpace safety. At the same time, the Administrator retains full authority to evaluate, accept, suspend, or withdraw standards to ensure an equivalent or greater level of safety. The consensus-based appendix therefore provides a structured modernization mechanism that encourages innovation, maintains national consistency, strengthens performance accountability, and aligns part 141 with contemporary aviation training practices while preserving regulatory control.

Modify Appendix: Recreational pilot to Sport Pilot

The Recreational Pilot appendix should be removed and replaced with a Sport Pilot appendix because the Recreational Pilot certificate has become a minimally utilized and largely obsolete training pathway within the current general aviation environment. Certification activity under the Recreational Pilot category has declined significantly and no longer reflects meaningful training demand. In contrast, the Sport Pilot certificate serves as an active entryway into aviation for many applicants and is positioned to expand further under the FAA's Modernization of Special Airworthiness Certification (MOSAIC) initiative. MOSAIC is expected to broaden aircraft eligibility, increase operational flexibility, and expand the utility of light-sport aircraft, which will likely increase demand for Sport Pilot training. Maintaining a Recreational Pilot appendix while lacking a dedicated Sport Pilot appendix creates regulatory misalignment within part 141

and fails to reflect evolving certification trends. Replacing the Recreational Pilot appendix with a Sport Pilot appendix would modernize the regulatory structure, better align approved course offerings with current and anticipated training demand, and maintain instructional rigor while ensuring part 141 remains responsive to contemporary aviation policy developments.

Recommendation 8: Registered Pilot School

Replace the current provisional flight school certification with a new “registered” flight school status to allow an easier initial pathway for 141 pilot school certifications.

Applicable Regulations

§ 141.7 Registered pilot school

Current Situation

Under the current regulatory framework, the FAA provides for provisional pilot school certification as an intermediate step toward full part 141 certification. In practice, however, the provisional approval process requires nearly the same level of documentation, curriculum development, FAA review, and administrative workload as full certification. The applicant must prepare comprehensive training course outlines, designate required management personnel, and undergo extensive FAA evaluation.

As a result, provisional approval does not meaningfully reduce regulatory burden for either the applicant or the FAA. The review process consumes comparable FAA resources to full certification, while offering limited distinct privileges. This structure creates inefficiency within the certification pipeline and may discourage smaller or emerging schools from pursuing eventual part 141 approval due to the administrative complexity of the provisional stage.

Additionally, the current provisional framework does not clearly distinguish between schools operating under part 61 and those formally certificated under part 141, leading to regulatory ambiguity and inconsistent expectations.

Recommended Changes

It is recommended that the provisional pilot school framework be eliminated and replaced with a Registered Pilot School category under § 141.7.

The proposed Registered Pilot School status would:

- Allow a school to formally register with the FAA without being certificated under part 141;
- Provide transparency to the public while clearly distinguishing registered status from certificated status;
- Permit the school to conduct training in accordance with part 61 requirements;

- Require only limited, clearly defined administrative information and basic safety practices;
- Impose minimal FAA oversight focused on airworthiness, instructor qualification, and proper public representation; and
- Allow a school to begin preparing for eventual part 141 certification without requiring immediate compliance with full Subpart C course approval requirements.

Under this structure, a Registered Pilot School would hold no special privileges, including no examining authority, no special curriculum authority, and no authority to represent itself as FAA-certified. It would instead serve as a transparent, entry-level recognition status for schools that may intend to pursue part 141 certification in the future.

This approach provides several benefits:

1. Reduces unnecessary administrative workload for both applicants and the FAA;
2. Preserves the integrity and value of full part 141 certification;
3. Creates a clear and honest public distinction between registered and certificated schools;
4. Encourages pathway progression toward full certification without imposing premature regulatory burden; and
5. Aligns oversight intensity with operational risk and privileges granted.

The Registered Pilot School framework modernizes the front end of part 141 by separating basic registration from certification privileges, improving efficiency while maintaining safety and regulatory clarity.

Additional Recommendations

1. FAA Sanctioned Mentorship Program

Additional Recommendation

The establishment of an FAA-sanctioned mentorship program, pairing seasoned part 141 institutions with new applicants, would bridge the significant "knowledge gap" that often stalls the initial certification process during the development of Quality Management Systems (QMS) and Safety Management Systems (SMS). While current regulations provide the structural requirements for these systems, they often lack the practical, "boots-on-the-ground" guidance necessary to move beyond mere paperwork and into a functional safety culture. A mentorship model would allow established schools to share proven templates for hazard reporting, risk assessment matrices, and internal audit procedures that have already withstood FAA scrutiny. By leveraging the institutional wisdom of veteran schools, new applicants can implement a QMS that actually drives training quality and an SMS that proactively identifies risks, rather than struggling through a cycle of document rejections that slows down the FAA's oversight pipeline.

Furthermore, this collaborative approach would shift the focus of the application process from administrative compliance to the genuine cultivation of safety leadership. Mentors can provide "real-world" insights into how a Chief Flight Instructor effectively manages the data-rich environment of an SMS, transforming raw safety reports into actionable training improvements. This peer-to-peer transfer of expertise ensures that a new school's examining authority is built on a foundation of professional maturity and standardized evaluation processes from day one. Instead of the FAA acting as the sole educator during the certification phase, a mentorship program creates a community of practice where high standards are self-sustaining, ultimately producing a more resilient and standardized national pilot training infrastructure.

2. Encourage Curriculum Sharing Between Schools

Additional Recommendation

The current FAA regulatory environment often forces each part 141 flight school to "reinvent the wheel" by developing proprietary Training Course Outlines (TCOs) from scratch, a process that is both administratively burdensome and prone to inconsistency. By encouraging curriculum sharing between established,

high-performing schools and new applicants, the FAA could significantly reduce the redundant workload placed on school management and Certificate Management Offices (CMOs). When a school adopts a "gold standard" curriculum that has already been vetted and flight-tested by a peer institution, the FAA inspector's review process shifts from a granular deconstruction of a new document to a more streamlined verification of implementation. This collaborative approach ensures that the fundamental building blocks of pilot training, lesson objectives, completion standards, and stage check criteria, are standardized across the industry, allowing both the school and the FAA to focus their limited resources on the quality of instruction rather than the formatting of a manual.

Furthermore, curriculum sharing acts as a natural catalyst for safety and pedagogical evolution within the National Airspace System. When schools are incentivized to share best practices, a "living curriculum" emerges that can be rapidly updated to reflect new technology, such as advanced avionics or electric propulsion, or to address emerging safety trends identified through SMS data. For the FAA, this creates a more manageable oversight environment where multiple schools operate under a unified, high-quality framework, making it easier for inspectors to identify deviations from the standard. By breaking down the silos of proprietary syllabi, the FAA can foster a community-based training model where the collective expertise of the industry is leveraged to maintain the highest levels of safety, all while slashing the bureaucratic lead times that currently hinder school growth and regulatory agility.

3. Unified Policy and Coordination Between AFS-810 and AFG-940 for Commercially Developed Training Syllabi

Additional Recommendation

It is recommended that the FAA establish a formal coordination framework between AFS-810 and AFG-940 to ensure consistent, unified determinations regarding the use of commercially developed syllabi accepted at the national level by part 141 pilot schools. This framework should preserve AFG-940's authority to evaluate how a school proposes to operationally implement a syllabus, while preventing conflicting or duplicative reviews of syllabus content that has already been evaluated and accepted by AFS-810.

Additionally, the FAA should clarify that commercially developed syllabi produced by Commercial Training Providers (CTPs) for use by multiple part 141 pilot schools, regardless of training delivery method, are subject to centralized review

and acceptance by AFS-810, similar to the existing acceptance process for Internet Training Providers (ITPs) described in AC 141-1B.

The FAA should clearly distinguish between syllabus content acceptance and school-specific operational implementation, and ensure that questions or concerns related to syllabus structure, clarity, or design are routed back to AFS-810 for coordination with the Commercial Training Provider (CTP), rather than being resolved independently during the school certification review process.

Current Situation

Coordination Challenges

Currently, commercially developed syllabi may be reviewed and accepted by AFS-810 for use by part 141 pilot schools. However, when individual schools submit part 141 applications to AFG-940 using these accepted syllabi, additional questions or concerns may arise during AFG-940's review. In some cases, these concerns result in conflicting determinations regarding the same syllabus, effectively overriding or undermining the prior acceptance issued by AFS-810.

This dynamic has led to duplicate reviews, inconsistent guidance, and delays in the part 141 approval process. Schools using FAA-accepted commercial syllabi may be required to clarify or justify syllabus elements that were previously evaluated at the national level, creating frustration for schools and commercial providers alike. In some instances, schools are uncertain whether the FAA has, in effect, reviewed and accepted the syllabus, which undermines confidence in the Letters of Acceptance issued by AFS-810 for commercially developed syllabi.

AFG-940 has noted that many of these issues stem not from the syllabus content itself, but from how applicant schools describe, or fail to clearly describe, how the syllabus will be operationally implemented within their training program. This distinction should be clearly articulated in current policy or application guidance.

Guidance Clarity

Advisory Circular 141-1B establishes a clear national acceptance pathway for products developed by Internet Training Providers (ITPs), requiring such products to be reviewed and accepted by the FAA prior to use by part 141 pilot schools. Internet Training Providers represent one category of Commercial Training Providers (CTPs), which develop standardized training materials or syllabi intended for use by multiple pilot schools. However, the advisory circular

does not provide equivalent guidance for commercially developed syllabi produced by Commercial Training Providers (CTPs) that encompass in-person ground training, flight training, or multiple delivery methods, despite these products similarly being designed for standardized use across multiple pilot schools.

In the absence of explicit guidance, broader commercially developed syllabi produced by Commercial Training Providers (CTPs) may not consistently undergo a centralized FAA acceptance process prior to being submitted as part of individual part 141 applications. This can result in content-related questions being addressed independently during school certification reviews, rather than through coordinated engagement with the responsible FAA office or the commercial provider. The lack of a clearly defined national acceptance mechanism for these commercially developed syllabi contributes to inconsistent interpretations, duplicative reviews, and uncertainty regarding the authoritative status of prior FAA determinations.

Proposed Language

Unified Coordination

The following policy concept is proposed for consideration in an Advisory Circular, FAA Order, or other appropriate guidance material:

When a commercially developed syllabus has been reviewed and accepted by AFS-810, that acceptance shall serve as the FAA's authoritative determination regarding the syllabus content and structure for standardized use across multiple pilot schools. AFG-940 and regional FSDOs shall not independently reject or require modification of accepted syllabus content.

AFG-940 shall retain authority to evaluate how an applicant pilot school proposes to operationally implement an accepted syllabus, including the selection of available training delivery methods, lesson sequencing, and mandatory versus optional elements.

If questions arise regarding syllabus structure, clarity, or interpretation that extend beyond school-specific implementation, those questions shall be coordinated with AFS-810 for resolution, including engagement with the Commercial Training Provider (CTP) responsible for the syllabus.

As an alternative to formal policy issuance, the FAA could initially implement this framework through internal coordination guidance or standardized review procedures between AFS-810 and AFG-940.

Guidance Clarity

The following language is proposed to clarify the treatment of commercially developed syllabi within AC 141-1B and distinguish them from Internet Training Provider products:

Commercially Developed Syllabi.

Pilot schools may elect to use commercially developed syllabi that have been reviewed and accepted by the FAA. Such syllabi may support one or more training delivery methods, including in-person ground instruction, online ground training, flight training, or a combination thereof.

When submitting a part 141 application utilizing an accepted commercially developed syllabus, the applicant pilot school must clearly describe how the syllabus will be operationally implemented, including the specific training delivery methods selected where multiple options are available.

FAA acceptance of a commercially developed syllabus constitutes acceptance of the syllabus content and structure. The FAA's review of a pilot school application will focus on the school's proposed implementation of the syllabus within its training operation, rather than a re-evaluation of accepted syllabus content.

Internet Training Providers (ITPs) represent one category of Commercial Training Providers (CTPs) and are subject to the guidance in paragraph 3.16. Commercially developed syllabi intended for use by multiple part 141 pilot schools, regardless of training delivery method, should be reviewed and accepted by AFS-810 prior to use in individual school applications.

As an interim measure, the FAA may also consider issuing supplemental guidance or application instructions clarifying how pilot schools should document the use of commercially developed syllabi that include multiple training delivery options.

This approach should be reflected consistently in both advisory circular guidance and FAA Order 8900.1 to ensure uniform application across all reviewing offices.

Addition to FAA Order 8900.1, Volume 2, Chapter 9, Section 1

Internet-Based Training.

...

When a commercially produced internet-based course has been reviewed and accepted by AFS-810, that acceptance constitutes the FAA's determination that the course content and associated syllabus meet applicable part 141 requirements.

The role of the approving inspector and AFG-940 in reviewing a pilot school's Training Course Outline (TCO) that incorporates such a course is limited to evaluating how the school proposes to operationally implement the course within its training program.

Inspectors shall not independently re-evaluate or require modification of the accepted course content or syllabus. If concerns arise regarding the content, structure, or interpretation of the accepted course, those concerns shall be coordinated with AFS-810 for resolution, including engagement with the Internet Training Provider (ITP) or Commercial Training Provider (CTP), as applicable.

The FSDO retains final authority for approval of the course for use within a school's TCO; however, such authority applies to the school's implementation and not to the re-evaluation of content previously accepted at the national level.

Addition to FAA Order 8900.1, Volume 3, Chapter 53, Section 2

Commercially Developed Training Syllabus.

...

When a commercially developed syllabus has been reviewed and accepted by AFS-810, that acceptance constitutes the FAA's authoritative determination that the syllabus content and structure are generally acceptable for use in part 141 training programs.

In such cases, the role of the reviewing inspector and AFG-940 is to evaluate whether the applicant pilot school fully understands the syllabus and is capable of implementing it within its training operation, rather than to re-evaluate or require modification of the accepted syllabus content.

Inspectors shall focus on the school's operational implementation of the syllabus, including how the school will deliver instruction, apply lesson sequencing, and meet required objectives and completion standards.

If questions or concerns arise regarding the syllabus content, structure, or clarity that extend beyond the applicant school's implementation, those issues shall be coordinated with AFS-810 for resolution, including engagement with the Commercial Training Provider (CTP) responsible for the syllabus.

Any required changes to the syllabus content identified through this process shall be addressed at the national level to ensure consistent application across all pilot schools using the syllabus.

The New System

Under the proposed system, commercially developed syllabi produced by Commercial Training Providers (CTPs) and intended for use by multiple part 141 pilot schools, regardless of training delivery method, would be accepted once at the national level by AFS-810 and maintained as authoritative records. This acceptance would apply equally to syllabi supporting in-person ground instruction, online ground training, flight training, or combinations thereof.

Schools electing to use these commercially developed syllabi would be required to clearly document how they intend to operate the syllabus within their part 141 program, rather than resubmitting or re-explaining syllabus content that has already been accepted at the national level by AFS-810.

AFG-940's review would focus on operational decisions made by the school, such as:

- Selection of available ground training delivery options (e.g., in-person versus online),
- Whether review elements within lessons are mandatory or optional,
- How the school integrates syllabus elements into its specific training environment.
- Whether lessons must be conducted in the sequence presented in the syllabus or whether the school permits modified lesson sequencing.

When AFG-940 identifies ambiguity or systemic concerns within the syllabus itself, those issues would be escalated to AFS-810, which would coordinate directly with the Commercial Training Provider (CTP) to clarify intent, revise language, or issue guidance applicable to all schools using the syllabus. This approach ensures consistent interpretation of accepted syllabi while preserving appropriate oversight at each level.

Synopsis

The lack of a clearly defined coordination between AFS-810 and AFG-940 has resulted in duplicate reviews, conflicting determinations, and unnecessary delays for part 141 pilot schools using commercially developed syllabi. This challenge is compounded by guidance that explicitly addresses Internet Training Provider products, while providing limited direction for broader commercially developed syllabi that support multiple training delivery methods.

While AFG-940's focus on operational implementation is appropriate, questions related to syllabus design, structure, or content should be resolved through coordination with AFS-810 to maintain a single FAA voice. By clearly separating syllabus acceptance from school-specific operational review, and by establishing a formal escalation and coordination process, the FAA can reduce inefficiencies, improve consistency, and restore confidence in the use of FAA-accepted commercially developed training syllabi.

This framework establishes a clear distinction between national-level content acceptance and local-level operational implementation, ensuring consistency across FAA reviewing offices while preserving appropriate oversight responsibilities.

4. Modernization of 14 CFR 141.53(d) for Internet-Based Training Course Revisions

Additional Recommendation

It is recommended that the FAA revise 14 CFR 141.53(d)(1) to reflect modern instructional delivery methods used in internet-based training courses. Specifically, the requirement to identify amendments "numerically by page, date, and screen" should be updated to allow for content-based revision tracking through an associated syllabus, rather than requiring static identification tied to individual screens.

The FAA should clarify that amendments to course content are to be documented within the associated syllabus submitted for FAA review, with changes recorded in a structured revision log (e.g., Record of Document Revisions). This approach aligns with current industry practices and FAA review processes, where the syllabus serves as the authoritative reference document and the internet-based course functions as the delivery medium.

Current Situation

14 CFR 141.53(d)(1) requires that amendments to internet-based training courses be “identified numerically by page, date, and screen.” This requirement reflects an earlier model of online training where course content was presented in static, page-based formats. However, modern internet-based training platforms utilize dynamic, scrollable interfaces, modular content structures, and continuously updated instructional elements that do not correspond to fixed “pages” or discrete “screens.”

As a result, compliance with this requirement is often unclear or impractical. In many cases, it is not feasible to identify changes by “screen,” nor is it clear whether the reference applies to the online course interface or to the associated syllabus document submitted to the FAA.

In practice, FAA review of internet-based training courses, such as those conducted by AFS-810, relies on a combined evaluation of the syllabus document and the live course environment, rather than a static, screen-by-screen comparison. The syllabus provides the structured framework, objectives, and compliance mapping, while the online course contains the instructional content, including videos, text, and assessments. Updates to course content may occur without requiring corresponding changes to the syllabus, provided the changes do not affect course structure or regulatory compliance.

This disconnect between regulatory language and actual review practices creates ambiguity for applicants and may lead to inconsistent interpretations of amendment requirements.

Proposed Language

The following revision to 14 CFR 141.53(d)(1) is proposed:

 | ***Course Amendments.***

Amendments to internet-based training courses must be identified and documented through an associated syllabus. Such documentation must include a revision number, date, and description of the change.

Minor editorial or typographical changes to the associated syllabus that do not affect course objectives, structure, or regulatory compliance do not require prior FAA approval, provided the certificate holder notifies the FAA within 30 days of implementation.

Minor editorial, clarifying, or instructional enhancements made within the internet-based course content that do not affect course objectives, structure, or regulatory compliance do not require FAA approval or notification, provided such changes remain consistent with the FAA-accepted syllabus.

The certificate holder must ensure that all substantive changes to course content, structure, or delivery that affect regulatory compliance are reflected in the associated syllabus and submitted for FAA review as required.

The New System

Under the proposed framework, internet-based training courses would be managed using a dual-structure model:

- The **syllabus** serves as the authoritative, revision-controlled document submitted to and accepted by the FAA.
- The **internet-based course** serves as the instructional delivery platform, which may be updated as needed to improve clarity, accuracy, or instructional effectiveness.

Course revisions would be tracked within the syllabus document using a structured revision log, such as a Record of Document Revisions, ensuring transparency and traceability.

FAA review would focus on whether changes affect course objectives or compliance with part 141 requirements, or alter the structure or required elements of the approved course rather than requiring identification of changes at the level of individual screens or pages within the online platform.

5. Clarification of Knowledge Test Endorsement Authority for Internet-Based Training Under Part 141

Additional Recommendation

It is recommended that the FAA clarify, through policy guidance (FAA Order 8900.1), that knowledge test endorsements for students enrolled in part 141 training programs must be issued or validated by the certificated pilot school, regardless of whether the student completed ground training through an internet-based course provided by a Commercial Training Provider (CTP).

The FAA should further clarify that graduation certificates issued by internet-based training providers may serve as documentation of course completion, but are not sufficient on their own to authorize a student to take the FAA knowledge test under a part 141 program without review and validation by the pilot school.

This clarification would ensure that responsibility for student readiness and knowledge test outcomes remains with the certificated pilot school, consistent with the school's accountability for pass rates under 14 CFR 141.5(d).

Current Situation

Under current practice, students enrolled in part 141 pilot schools may complete ground training through internet-based courses provided by Commercial Training Providers (CTPs). Upon completion, these providers issue graduation certificates in accordance with 14 CFR 141.95, including unique identifiers for internet-based training.

In practice, these graduation certificates are often used by students as the basis for obtaining authorization to take the FAA knowledge test. In some cases, they are treated as sufficient for endorsement purposes without clear involvement from the certificated pilot school responsible for the student's training program.

This creates ambiguity regarding:

1. Whether the pilot school has verified the student's readiness for the knowledge test, and
2. Which entity is accountable for the student's performance under 14 CFR 141.5(d) pass rate requirements

As a result, there is a disconnect between **training responsibility and endorsement authority**, particularly in cases where ground training is completed through external providers.

Proposed Language

FAA Order 8900.1, Volume 2, Chapter 9, Section 1:

D. Internet-Based Training.

...

For students enrolled in a part 141 pilot school, authorization to take an FAA knowledge test must be issued or validated by the certificated pilot school in accordance with its approved training course outline (TCO).

Completion of an internet-based ground training course provided by a Commercial Training Provider (CTP), including the issuance of a graduation certificate under §141.95, may be used by the pilot school as documentation of course completion. However, such documentation is not sufficient on its own to authorize a student to take the FAA knowledge test without review and validation by the certificated pilot school.

The certificated pilot school is responsible for verifying that the student has satisfactorily completed the required ground training and is prepared for the knowledge test. The school must issue or validate the appropriate endorsement or authorization in accordance with its approved procedures.

The pilot school retains responsibility for tracking student performance on knowledge tests for purposes of compliance with §141.5(d).

The New System

Under the proposed policy clarification:

- **Commercial Training Providers (CTPs)** deliver ground training and issue graduation certificates as proof of completion
- **Part 141 Pilot Schools** review course completion documentation, validate student readiness, and issue or formally validate the knowledge test endorsement

Graduation certificates would continue to serve as a valuable verification tool, but the pilot school would remain the final authority for determining whether a student is prepared to take the knowledge test through issuance or validation of a knowledge test endorsement.

6. Standardized Training Course Outline (TCO)

Current Situation

The current regulatory requirement for a part 141 school to develop a Training Course Outline (TCO) from scratch represents a massive administrative bottleneck that drains resources from both the institution and the FAA. At the school level, the "blank slate" approach forces Chief Flight Instructors and management to spend hundreds of hours on technical writing and curriculum design, tasks that are often outside their primary expertise of flight instruction and safety oversight. This manual creation process frequently leads to clerical errors, formatting inconsistencies, and unintentional regulatory gaps. Instead of focusing on the actual quality of training or the implementation of a robust Safety Management System (SMS), the school's leadership is bogged down in a months-long cycle of drafting, revising, and re-submitting documents that essentially aim to teach the same fundamental maneuvers required by the Airman Certification Standards (ACS).

From the perspective of the Central Management Office (CMO) or Flight Standards District Office (FSDO), this lack of standardization creates an equally inefficient oversight environment. Because every school submits a unique, proprietary document, FAA inspectors cannot use a streamlined, automated verification process. Instead, they must perform a line-by-line manual audit of every lesson, stage check, and completion standard for every individual school to ensure regulatory compliance. This "bespoke" review process is the primary driver of the notorious backlogs in part 141 certifications. When the FAA is forced to spend its limited man-hours acting as a copy editor for unique TCOs, it has less time to conduct high-value field observations of check instructors or analyze safety data. The result is a system where "compliance via paperwork" takes precedence over "compliance via standardized performance," slowing down industry growth and creating an inconsistent national training landscape.

Additional Recommendation

The implementation of a standardized Training Course Outline (TCO) across FAA-approved part 141 flight schools would fundamentally transform the efficiency of both regulatory oversight and industry operations. For the FAA, a "gold standard" template eliminates the immense administrative burden of deconstructing and vetting thousands of unique, proprietary syllabi. When inspectors review a standardized TCO, the focus shifts from auditing the *structure* of the document to auditing the *quality* of the instruction and the school's compliance with established norms. This creates a more predictable and streamlined approval process, allowing Certificate Management Offices (CMOs) to allocate their limited resources toward high-level safety oversight and SMS data analysis rather than tedious manual corrections.

For the flight training industry, a standardized TCO acts as a catalyst for professional mobility and operational scalability. Schools can adopt a pre-vetted curriculum that already incorporates the most effective pedagogical strategies and modern safety enhancements, significantly lowering the "barrier to entry" for new institutions.

7. Establish a “Crosstalk” Program Between (EOC) Check Instructors and DPEs to Enhance Standardization.

Additional Recommendation

Establishing a formal crosstalk program between part 141 check instructors and Designated Pilot Examiners (DPEs) begins with the FAA facilitating regular, structured Standardization Roundtables. These forums would serve as a neutral ground where check instructors, who handle internal quality control for flight schools and DPEs, who represent the FAA's final gatekeeping authority, can synchronize their expectations on Practical Test Standards (PTS) or Airman Certification Standards (ACS) maneuvers. By discussing common areas of student deficiency and interpreting ambiguous regulatory language together, both parties can eliminate the "evaluator variance" that often confuses applicants. This ensures that the criteria used to pass a stage check within a school aligns perfectly with the criteria used during a formal check ride.

To move beyond theoretical discussion, the FAA could implement a Reciprocal Observation Initiative. Under this framework, 141 check instructors would be invited to observe DPEs conducting initial or renewal practical tests, while DPEs would occasionally audit 141 stage checks. This "fly-on-the-wall" approach allows check instructors to see exactly how DPEs apply the ACS in a real-world testing environment, particularly regarding soft skills like Aeronautical Decision Making (ADM) and risk management. Conversely, DPEs gain insight into the specific training methodologies and internal cultures of the flight schools feeding them candidates. This transparency reduces the "us vs. them" mentality, replacing it with a collaborative environment focused on data-driven safety improvements.

Finally, the backbone of this crosstalk program should be a Shared Data & Trend Analysis Portal managed by the local Central Management Office (CMO). By de-identifying check ride failure data and stage check results, the FAA can provide both groups with a clear picture of localized safety trends or frequent notice of disapproval causes. If DPEs in a specific region notice a spike in poor landings, they can relay this trend to 141 check instructors, who can then adjust internal grading rubrics and CFI training mid-course. This closed-loop communication system transforms standardization from a static set of rules into a dynamic, evolving process that proactively addresses training gaps before they lead to check ride failures or accidents.

8. Establish a National Flight Training Innovation & Research Program.

Additional Recommendation

Create and fund a dedicated FAA–industry–academic Flight Training Innovation & Research Program to ensure U.S. pilot training remains modern, evidence-based, and globally competitive while supporting continuous improvement in both training quality and operational safety. This program should be closely integrated with the centralized part 141 oversight structure, allowing the FAA to leverage nationally aggregated pilot training data to identify areas requiring further study and improvement.

Through the centralized repository of part 141 pilot school performance data maintained by the Central Management Office (CMO), the FAA will be able to identify systemic trends, training inefficiencies, and emerging safety risks. These data trends, combined with feedback from industry stakeholders such as the CMO’s Industry Advisory Board (IAB), training providers, and academic partners, should serve as the primary mechanism for initiating targeted research initiatives. In addition, a structured feedback loop incorporating aggregated pilot performance data from air carriers and other commercial operators should be established to identify training gaps observed in advanced aircraft operations. This feedback will allow the FAA and training providers to better align early pilot training with the competencies required in modern airline environments.

The program should include the following actions:

- **Establish a National Flight Training Research & Validation Network**
Fund a structured network of approved part 141/142 schools and university partners authorized to pilot, measure, and validate new training methodologies, curriculum models, instructor development programs, and regulatory alternatives before broad adoption. These institutions should coordinate with the Central Management Office (CMO) to evaluate training initiatives using nationally aggregated pilot training data and industry feedback.
- **Fund Applied Research**
Provide competitive grants to study topics such as:
 - Competency-based progression vs. hour-based requirements
 - Aeronautical decision-making and scenario-based training effectiveness
 - Instructor teaching methodologies and debrief quality
 - Instructor calibration and standardization methods
 - Student learning science and cognitive workload in flight training

- Automation management and glass cockpit transition training
- Risk management behaviors in primary training
- Causes of training delays, attrition, and inefficiency
- Simulation credit ratios and transfer-of-training validation
- Analysis of airline pilot performance trends to identify training gaps that may originate during initial pilot training
- **Elevate Instructional Quality as a National Priority**
Fund research and pilot programs focused specifically on improving instructional effectiveness, including:
 - Structured pedagogical training for CFIs
 - Coaching-based instructional models
 - Data-driven instructor performance feedback systems
 - Tiered instructor qualification frameworks
 - Instructor mentoring and professional development pathways
- **Develop a Shared, Anonymized Training Data Repository**
Support the creation of a national database to aggregate de-identified training performance data, enabling objective analysis of proficiency trends, safety indicators, completion rates, and instructional quality metrics. Where appropriate, this repository should also incorporate anonymized performance trend data from airline training programs and commercial operators to create a feedback loop linking early pilot training outcomes with operational performance in advanced aircraft environments.
- **Link Research Outcomes to Regulatory Modernization**
Create a formal pathway to translate validated findings into updates to Parts 61, 91, 141, and 142, ensuring modernization is supported by empirical evidence rather than anecdote or tradition and that training standards evolve in response to measurable performance outcomes throughout a pilot's career progression.

Just as the NextGen ATC testbed ensures modernization of the air traffic system is deliberate and data-supported, a Flight Training Innovation & Research Program would ensure pilot training reform is grounded in measurable safety improvement, instructional quality, efficiency, and long-term workforce readiness.

This initiative would position the United States as the global leader in evidence-based flight training while professionalizing instruction and strengthening training outcomes nationwide.

9. Implement ITE (Initial Teaching Experience) for Newly Certificated CFIs

Establish an Initial Teaching Experience (ITE) requirement for newly certificated flight instructors tied to the first 100 hours of dual instruction given. This creates a structured, experience-based developmental phase focused on instructional quality, standardization, and professionalism.

ITE Framework (First 100 Hours of Dual Given). ITE would function as a formal professional onboarding phase similar in concept to Initial Operating Experience (IOE) in air carrier operations.

Structured Observation & Evaluation. During the first 100 hours of dual instruction given, the CFI must be observed and evaluated at defined intervals (e.g., early phase, mid-point, and near completion of 100 hours).

Observations must be conducted by a Senior Flight Instructor. Evaluation must include assessment of:

- Fundamentals of Instruction (FOI) application, including:
 - Effective use of learning theory
 - Recognition of defense mechanisms
 - Proper sequencing of lessons
 - Student-centered instruction
 - Appropriate use of critique and feedback
- Instructional clarity and lesson structure
- Scenario-based training delivery
- Aeronautical Decision-Making (ADM) instruction
- Risk management coaching
- Debrief quality and feedback effectiveness
- Professional conduct and communication

A standardized evaluation rubric should be required to ensure calibration and consistency.

Reciprocal Observation Requirement: During the ITE period, the new instructor must:

- Observe experienced instructors (including Senior Flight Instructors) conducting both ground and flight/simulator instruction.
- Document learning observations related to:
 - FOI application in real-world instruction
 - Debrief methodology

- Risk-based coaching
- Student engagement techniques
- Professional interaction standards

This promotes calibration and exposure to high-quality instructional models.

Targeted Developmental Training. During the 100-hour ITE period, the CFI must complete structured supplemental training in:

- Advanced instructional methodology and applied FOI
- Teaching ADM and risk management (TEM, PAVE, 3P, operational decision-making)
- Professionalism, ethics, and customer service standards
- Communication, expectation management, and conflict resolution

Completion Review & Endorsement. Upon completion of 100 hours of dual given:

- The Senior Flight Instructor conducts a formal review.
- Instructional calibration and professional standards are verified.
- The instructor transitions to the standard renewal cycle under §61.197.

Purpose and Rationale. The first 100 hours of instruction are formative. This is when instructional habits, grading standards, and professional identity are established.

ITE ensures:

- FOI principles are applied in practice, not just tested on a knowledge exam.
- ADM and risk management instruction are consistently delivered nationwide.
- Instructor standardization improves early in a CFI's career.
- Professionalism and student experience are reinforced.

By tying ITE to instructional exposure rather than calendar time, this requirement strengthens instructional quality at its foundation while preserving workforce flow and avoiding unnecessary administrative burden. ITE elevates flight instruction from a transitional job to a structured professional development pathway.

10. Extend Part 141 Graduation Certificate Validity Period

Current regulations and many Training Course Outlines (TCOs) tie the usability of a part 141 graduation certificate to a relatively short window, commonly 60 days from the date of issuance/graduation, for a student to complete the practical test under the benefits of §61.71. While the intent is to ensure recent proficiency, this short period frequently creates logistical challenges. These challenges include but are not limited to, weather delays, scheduling conflicts with Designated Pilot Examiners (DPE's), aircraft availability, severe temperature (hot or cold), or personal circumstances that can delay testing when trying to schedule many weeks (4-6) in advance. These unforeseen circumstances can easily push a check ride outside the prescribed window, even when the student is fully prepared and the training was completed to standards. Additionally, with the 60 day window separated from the 60 testing window- one can expire while the other is still in an "active" state. This disparity can also lead to a need to redo the End of Course in the midst of testing. The End of Course could be issued well before the DPE is available to help.

This often results in the need to repeat the end-of-course check, receive a new graduation certificate, and add extra administrative work for the school and student with no meaningful safety gain in most cases. This also burdens the student with paying for this second test because there was no DPE available at the conclusion of their training.

Proposal to adopt a standardized validity period for a graduation certificate to remain valid for a 120-day window. This extension would provide reasonable flexibility for scheduling while still ensuring that the training remains current enough for safe certification. Schools could retain the ability to require refresher training if significant time has passed or proficiency has lapsed, while not incurring the financial burden of a complete end-of-course (usually taking multiple hours on the ground and flight) redo and reduce paperwork burden on the schools also.

11. Permit Part 141 Annual Instructor Standardization Training to Satisfy FIRC requirements

The FAA should permit a part 141 pilot school's FAA-approved annual instructor standardization training program to satisfy the Flight Instructor Refresher Course (FIRC) requirements of 14 CFR §61.197, provided the training meets or exceeds the applicable regulatory content standards. This alignment would reduce redundant training burdens on chief instructors, assistant chief instructors, and check instructors while maintaining or improving the quality and standardization of instruction. Many part 141 schools already deliver robust, FAA-approved annual standardization programs that cover regulatory updates, teaching techniques, evaluation standards, and safety trends—often exceeding the depth of a traditional FIRC and include many local area concerns. Allowing these approved programs to fulfill §61.197 requirements would streamline compliance, lower costs for instructors and schools, eliminate duplicate training, and enable instructors to focus more time on actual flight and ground instruction rather than repetitive administrative refresher courses.

12. FTD Credit Allowance

The FAA should evaluate the possibility of allowing certified flight instructors (CFI's) to log instructional time conducted under an approved 141 or 142 training course in a qualified flight training device (FTD) at a 1:2 credit ratio. To verify that the credits are properly applied, the device would have to follow these recommendations- dual controls and the CFI operates from a pilot station. With such credited time counting towards the already approved 100-hour allowable credit found in 61.159(a)(6) for the total aeronautical experience requirements of an R-ATP certificate. This suggestion mirrors the 61.159(d) that already permits commercial pilots to credit flight engineer time toward the 1,500 hour total time as a pilot at a 1:3 ratio for a maximum of 500 hours. Demonstrating the FAA's long-standing recognition that certain high-value, non-traditional aeronautical experience can safely be credited at a reduced ratio.

An exhaustive review of current regulations, AC 141-1B, AC 61-136, and § 61.51 confirms that CFIs currently receive no credit for instructional time in FTDs because FSTD's are not "aircraft" under the PIC logging rules; however, part 141/142 approved programs already authorize substantial FTD use for student training with defined credit ratios in the TCO and device LOA. Extending analogous credit to instructors operating from a functional pilot station would promote greater use of simulation and associated costs/risks, enhance instructor standardization and proficiency, and align with industry recommendations (such as those from the Air Carrier Training Aviation Rulemaking Committee) to expand FSTD credits while preserving the 100-hour cap in § 61.159(a)(6). This targeted adjustment would support technical competency, standardization, and efficient progression for CFIs pursuing ATP certification without compromising safety or regulatory integrity.

APPENDIX A- Sample FAA Order 8900.1

FEDERAL AVIATION ADMINISTRATION

FAA ORDER xxxx.xx

QUALITY MANAGEMENT SYSTEMS FOR CERTIFICATED PILOT SCHOOLS

Date:

Initiated by: Flight Standards Service (AFS)

VOLUME 1 — GENERAL POLICY

1.1 PURPOSE

This order establishes the Federal Aviation Administration (FAA) policy, guidance, and procedures for the implementation, oversight, and evaluation of Quality Management Systems (QMS) within Approved Training Organizations (ATOs). The intent is to ensure consistent training quality, compliance with regulatory requirements, and continuous improvement in training outcomes.

1.2 BACKGROUND

ICAO Annexes 1, 3, 8, 14, 15, and 19 include provisions relating to the implementation of Quality Management Systems. While QMS requirements are well-established in AIS and MET domains, equivalent standards for ATOs have not been formalized in FAA policy. This order aligns FAA oversight practices with ICAO QMS guidance (Doc 9830) and industry best practices.

1.3 APPLICABILITY

This order applies to all FAA personnel responsible for the certification, surveillance, and oversight of ATOs under Title 14 of the Code of Federal Regulations (14 CFR) part 142, and to all ATOs conducting approved training programs under FAA authority.

1.4 REFERENCES

1. ICAO Annex 1 — Personnel Licensing
2. ICAO Doc 9830 — Quality Management System Manual
3. FAA Order 8900.1 — Flight Standards Information Management System (FSIMS)
4. ISO 9001:2015 — Quality Management Systems Requirements

1.5 DEFINITIONS

Quality Management System (QMS): A structured management approach that establishes policy, objectives, and processes necessary to ensure consistent delivery of quality outcomes.

Quality Assurance (QA): The part of a QMS focused on providing confidence that quality requirements will be fulfilled.

Quality Control (QC): The operational techniques and activities used to verify that quality requirements are met.

1.6 POLICY STATEMENT

FAA policy requires each Approved Training Organization to establish, document, implement, and maintain a Quality Management System. The QMS must encompass all processes influencing training quality, including course design, instructor qualification, trainee assessment, and feedback mechanisms. The FAA will oversee and evaluate QMS effectiveness as part of certification and continued surveillance activities.

VOLUME 2 — FAA INSPECTOR OVERSIGHT PROCEDURES

2.1 INSPECTOR RESPONSIBILITIES

Principal Operations Inspectors (POIs) and Principal Maintenance Inspectors (PMIs) are responsible for verifying that an ATO's QMS is established, documented, and implemented effectively.

2.2 CERTIFICATION PROCESS

During initial certification, inspectors shall review the ATO's Quality Manual to confirm alignment with FAA requirements. Approval is contingent upon demonstration of a functioning QMS.

2.3 SURVEILLANCE AND AUDIT PROCEDURES

Inspectors must evaluate QMS performance during routine and special surveillance, including sampling of training records and observation of training activities.

2.4 CORRECTIVE ACTION AND FOLLOW-UP

When deficiencies are identified, inspectors shall ensure the ATO establishes corrective actions with root cause analysis and follow-up verification.

2.5 INTEGRATION WITH SAFETY MANAGEMENT OVERSIGHT

Inspectors shall promote integration between the ATO's QMS and Safety Management System (SMS).

VOLUME 3 — ATO IMPLEMENTATION GUIDANCE

3.1 ORGANIZATIONAL RESPONSIBILITIES

The Accountable Manager is responsible for the overall effectiveness of the QMS. A Quality Manager must be designated with authority to conduct internal audits.

3.2 QMS STRUCTURE AND DOCUMENTATION

Each ATO must maintain a Quality Manual describing its quality policy, objectives, and procedures. Document control processes shall ensure current versions are in use.

3.3 INTERNAL AUDIT AND MANAGEMENT REVIEW

The ATO must conduct internal audits at planned intervals. Management reviews shall be held at least annually to assess audit results and improvement opportunities.

3.4 PERFORMANCE MEASUREMENT AND CONTINUOUS IMPROVEMENT

Performance indicators such as course completion rates and instructor evaluations should be analyzed periodically.

3.5 TRAINING, COMPETENCY, AND RECORDKEEPING

All personnel responsible for quality functions must receive recurrent QMS training. Records of QMS activities shall be retained for inspection.

APPENDICES

APPENDIX A — SAMPLE QMS MANUAL STRUCTURE

1. Quality Policy and Objectives
2. Organizational Structure
3. Document Control
4. Internal Audit Process
5. Corrective and Preventive Action
6. Management Review
7. Records Management

APPENDIX B — FAA QMS OVERSIGHT CHECKLIST

1. Checklist includes:
 - a. Existence of Quality Manual
 - b. Internal Audit Schedule
 - c. Management Review Records
 - d. Corrective Action Tracking

e. Training Effectiveness

APPENDIX C — CROSS-REFERENCE: ICAO AND FAA MATERIALS

1. ICAO Annex 1: Personnel Licensing
2. ICAO Annex 15: Aeronautical Information Services
3. ICAO Doc 9830: QMS Manual
4. FAA Order 8900.1: FSIMS
5. FAA AC 142-1: Training Center Certification

APPENDIX B- Sample FAA Advisory Circular- QMS

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

ADVISORY CIRCULAR

AC No.: XX-XX

Date: (Insert Date)

Initiated by: AFS-XXX

SUBJECT: Quality Management Systems (QMS) for FAA-Approved Certificate Holders

1. PURPOSE

This advisory circular (AC) provides guidance and recommended practices for developing, implementing, and continuously improving a Quality Management System (QMS) for organizations that hold an FAA-issued certificate, authorization, or approval.

A QMS implemented under this AC is intended to:

- 1.1. Improve organizational standardization and repeatability,
- 1.2. Ensure quality and compliance with approved programs,
- 1.3. Provide a structured approach for measuring and improving performance,
- 1.4. Support performance-based oversight and reduce administrative burden.

Implementation of a QMS under this AC is voluntary, unless a QMS or specific QMS elements are required by regulation, Operations Specification, Letter of Authorization, or other FAA-imposed requirement applicable to the certificate holder.

This AC describes one acceptable means of establishing and maintaining quality processes. It does not constitute a regulation.

2. AUDIENCE

This AC applies to any FAA-approved certificate holder, including but not limited to:

- 2.1. Organizations operating under any part of Title 14 of the Code of Federal Regulations (14 CFR),
- 2.2. Entities operating under Letters of Authorization (LOA),
- 2.3. FAA-approved programs, approvals, or training activities,
- 2.4. Organizations preparing to apply for an FAA certificate and seeking to establish quality processes.

3. CANCELLATION

This AC does not cancel or replace any existing advisory circular.

4. RELATED READING MATERIAL

The following documents contain supporting concepts (not required for compliance):

- 4.1. FAA Order 8000.95 — Safety Management System
- 4.2. FAA Order 8900.1 — Flight Standards Information Management System
- 4.3. ISO 9001 — Quality Management Systems (industry reference only)

5. DEFINITIONS

- 5.1. Quality Management System (QMS): A structured set of documented processes used to ensure that the organization consistently meets requirements and continually improves performance.
- 5.2. Nonconformity: An observed or measured deviation from a required standard, procedure, or expected outcome.
- 5.3. Corrective Action: Action taken to eliminate the cause of a nonconformity and prevent recurrence.
- 5.4. Continuous Improvement: A systematic approach to analyzing performance and implementing improvements.

6. DISCUSSION

Certificate holders are responsible for complying with regulations applicable to their operations and programs. Many organizations accomplish this by using documented and repeatable processes to ensure standardization and accountability.

A QMS enables the organization to:

- 6.1. Define what it intends to do (policies, procedures, documentation),
- 6.2. Do what it defined (execution),
- 6.3. Measure performance and compliance (data / evaluations),
- 6.4. Improve based on what was learned (corrective actions and analysis).

7. QMS ELEMENTS

A QMS developed under this AC should include:

- 7.1. Quality Policy and Objectives
- 7.2. Document Control
- 7.3. Defined Processes and Procedures
- 7.4. Performance Measurement / Key Performance Indicators (KPIs)
- 7.5. Internal Evaluations / Audits
- 7.6. Corrective Action System
- 7.7. Management Review

8. CORRECTIVE ACTION PROCESS

The organization should use a corrective action system that includes:

- 8.1. Description of the issue or nonconformity,
- 8.2. Immediate containment (if required),
- 8.3. Root cause analysis,
- 8.4. Corrective actions to prevent recurrence,
- 8.5. Verification of effectiveness.

Corrective action documentation must be retained and made available to the FAA upon request.

9. FAA OVERSIGHT

When implemented voluntarily or required by regulation, QMS records and data may be evaluated by the FAA as part of routine oversight. Oversight may consider:

- 9.1. Data trends,
- 9.2. Internal evaluation results,
- 9.3. Corrective action status and effectiveness.

10. DISCLAIMER

This AC does not change, add, or modify regulatory requirements.

Use of a QMS under this AC is voluntary, unless a regulation, Operations Specification, Letter of Authorization, or FAA directive specifically requires a quality management function or system.

This AC outlines one acceptable means of compliance; organizations may use other systems that demonstrate quality, compliance, and continuous improvement.

APPENDIX C- Sample QMS Manual

1. General

Wingman Flight School has implemented a Quality Management System (QMS) that is integrated into its daily training and operational environment. The system is designed to provide continuous visibility into training performance, operational effectiveness, and regulatory compliance rather than functioning as a periodic inspection or administrative requirement.

At Wingman Flight School, quality assurance is achieved through the routine collection and evaluation of training data, structured internal audits, and a formal corrective action process that is used to address identified deficiencies. The QMS operates as a closed-loop system in which performance is continuously evaluated, issues are identified and analyzed, corrective actions are implemented, and results are monitored to ensure sustained improvement.

All QMS activities, including performance monitoring, internal audits, corrective action tracking, and management review, are documented within the Wingman electronic QMS system. This system serves as the authoritative source for all quality-related records and provides traceability for system performance over time.

The scope of the QMS includes all Part 141 training activities as well as the support functions that directly affect training quality, including dispatch operations, aircraft availability, simulation, and instructor standardization.

2. Required QMS Elements

2.1. Quality Policy and Documentation Requirements

Quality Policy

The Quality Policy at Wingman Flight School establishes the expectation that all training and operational activities will be conducted in a manner that is compliant, standardized, and continuously improving. This policy is communicated through instructor onboarding, standardization meetings, and leadership briefings.

In practice, the Quality Policy is implemented through the routine monitoring of performance metrics, the expectation that personnel report issues and inconsistencies, and the structured use of corrective action processes. Evidence of adherence to the Quality Policy is reflected in documented performance

reports, corrective action records, and management review outputs maintained within the QMS system.

Here is our quality Policy Statement:

Wingman Flight Training School

Quality Policy

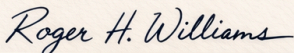
The Wingman Flight Training School is committed to the delivery of safe, standardized, and effective flight training in compliance with 14 CFR Part 141.83, approved Training Course Outlines (TCOs), and all applicable federal and institutional standards.

The Department maintains a structured Quality Management System to ensure systematic oversight, evaluation, and continuous improvement of its training and operational processes. This system integrates performance data, stakeholder feedback, and formal review mechanisms to assess instructional effectiveness, regulatory compliance, and operational consistency.

Through defined governance, documented procedures, and periodic review, the Department ensures that:

- ✓ Training is conducted in accordance with approved curricula and regulatory requirements.
- ✓ Instructional practices are standardized and subject to ongoing evaluation.
- ✓ Measurable performance outcomes inform program improvement.
- ✓ Identified deficiencies are addressed through timely corrective action.

Leadership is responsible for providing the resources, oversight, and institutional support necessary to sustain this quality framework. All instructors, staff, and students share responsibility for contributing to a culture of professionalism, accountability, and continuous improvement.



Roger H. Williams
FLIGHT SCHOOL DIRECTOR

Quality Manual

This manual serves as the central reference for how Wingman Flight School manages quality. It defines how responsibilities are distributed, how performance is monitored, and how improvement actions are developed and implemented.

The manual is maintained within the school's electronic QMS system, where revisions are controlled, tracked, and distributed. Each revision is documented with version history, approval, and effective date. When operational changes occur, such as adjustments to training procedures, updates to curriculum, or modifications to support processes, the relevant sections of this manual are reviewed and updated to reflect current practices.

Leadership ensures that personnel are aware of updates through standardization meetings and direct communication. Use of outdated procedures is mitigated by maintaining the electronic system as the authoritative source of all controlled documents.

Document and Record Control

Wingman Flight School manages documentation through a centralized electronic system that serves as the authoritative source for all controlled materials. This includes training course outlines, syllabi, operational procedures, and QMS documentation.

When a document is revised, the change is reviewed by the appropriate manager and approved prior to release. The updated version replaces the previous version within the system, and personnel are expected to reference the electronic system rather than printed copies.

Records generated through training and QMS activities—such as student progression data, internal audit reports, corrective action logs, and management review minutes—are stored electronically and organized to support both immediate retrieval and long-term trend analysis. Record entries include date, origin, and associated process, allowing traceability during audits and regulatory review.

2.2. Roles and Responsibilities

At Wingman Flight School, responsibility for quality is distributed across leadership and operational roles, with each position contributing to the overall effectiveness of the system.

QMS Accountable Manager

The Accountable Manager maintains oversight of the QMS and ensures that it remains functional and relevant to the operation. In practice, this role involves regular review of system performance through management review and periodic engagement with QMS outputs.

The Accountable Manager is responsible for ensuring that sufficient resources are available to support QMS activities and that corrective actions identified through the system are implemented and sustained. Decisions related to system-level improvements, resource allocation, and policy changes are documented through management review records.

Chief Instructor

The Chief Instructor at Wingman Flight School is responsible for applying QMS outputs to training operations. This role involves reviewing training-related findings identified through QMS data and implementing corrective actions that affect instructional delivery.

While the Chief Instructor does not serve as the primary data analyst, they evaluate trends identified by the Quality Assurance Manager and determine appropriate actions related to instructor standardization, training methods, and curriculum adjustments. The Chief Instructor has the authority to refuse any change suggested by the QMS system if they determine that it is unwarranted or infeasible. All actions taken by the Chief Instructor are documented through corrective action records and standardization documentation.

Quality Assurance (QA) Manager

The Quality Assurance Manager is responsible for the day-to-day operation of the QMS and serves as the central point for all quality-related data and documentation.

At Wingman Flight School, the QA Manager:

- Collects performance data from training and operational systems
- Conducts weekly, monthly, and quarterly data reviews
- Identifies trends, deviations, and nonconformities
- Generates documented performance reports
- Initiates and tracks corrective actions
- Coordinates internal audits
- Maintains all QMS records

The QA Manager documents all performance monitoring activities, including reports, trend analyses, and corrective action tracking logs, ensuring that the system provides verifiable evidence of performance and improvement.

Internal Audit Function

Internal audits are coordinated by the QA Manager and conducted by trained personnel who are independent of the area being audited to the extent practicable.

Audit planning, execution, findings, and follow-up actions are fully documented within the QMS system. Audit assignments are structured to maintain objectivity, and auditor qualifications and assignments are recorded.

Management Review Participation

Management review at Wingman Flight School is conducted as a collaborative evaluation of system performance. Participation is documented and includes the Accountable Manager, Chief Instructor, QA Manager, and other relevant operational leaders.

Meeting attendance, discussion points, decisions, and assigned actions are recorded as part of the QMS documentation.

2.3. Processes and Monitoring

Wingman Flight School monitors both training and support processes through a structured and documented performance monitoring system.

Training Processes

Training performance is monitored through the continuous collection of student performance data within the training management system.

The following metrics are tracked and recorded:

- Average hours to solo
- Average hours to course completion
- Stage check pass and failure rates
- End-of-course first-attempt pass rates
- Frequency of repeat lessons or retraining events

Instructors enter lesson results into the system, and this data is aggregated for analysis by the QA Manager.

Support Processes

Support processes are monitored based on their impact on training continuity and efficiency. Metrics tracked include:

- Aircraft availability rates
- Dispatch delays and cancellations
- Simulation utilization

This data is collected from operational systems and provided to the QA Manager for analysis.

Performance Monitoring and Review

The QA Manager is responsible for reviewing all performance data.

Reviews are conducted at the following intervals:

- Weekly: Review of instructor-level performance and short-term trends
- Monthly: Formal reporting of course-level performance and identified trends
- Quarterly: System-level trend analysis presented to leadership

Each review is documented through formal reports stored within the QMS system. These reports include identified trends, supporting data, and recommended actions.

Trend Identification

When performance deviates from expected levels, the QA Manager documents the trend, including a description of the issue, supporting data, and an initial assessment of scope.

Trends that meet defined thresholds or persist over multiple review periods are escalated for corrective action.

2.4. Corrective Action and Continuous Improvement

Corrective action at Wingman Flight School is initiated when performance data, audit findings, or operational observations indicate a deviation from expected performance.

Each issue is documented within the corrective action tracking system and includes:

- Description of the issue
- Source of identification
- Root cause analysis
- Assigned corrective action

- Responsible individual
- Implementation timeline

The QA Manager coordinates root cause analysis with the appropriate process owner and ensures that the analysis is documented and addresses underlying causes.

Corrective actions are implemented by the assigned responsible individual, such as the Chief Instructor for training-related issues. The QA Manager tracks progress and updates the corrective action record.

Effectiveness is verified through follow-up review of performance data. Corrective actions remain open until effectiveness has been demonstrated and documented.

2.5. Internal Audits

Internal audits are conducted as a structured evaluation of both compliance and operational effectiveness.

The QA Manager develops and maintains an annual audit schedule that ensures all major training and support processes are evaluated at least once per year. High-risk areas or areas with known issues may be audited more frequently.

Standardized audit checklists are developed by the QA Manager and are based on Part 141 requirements, QMS procedures, and approved TCOs. These checklists are used to ensure consistency across all audits.

During an audit, the auditor reviews documentation, evaluates compliance with procedures, and assesses whether processes are producing the intended outcomes. Findings are documented with supporting evidence and categorized as nonconformities or observations.

All findings are entered into the corrective action system and tracked through implementation, verification, and closure. Audit results are also reviewed during management review.

2.6. Management Review

Management Review at Wingman Flight School is a formal, documented evaluation of the QMS conducted to determine whether the system remains effective, adequate, and aligned with operational needs.

Management Review is conducted at least once every 12 calendar months and may be conducted more frequently if significant issues arise.

The QA Manager prepares and presents the following inputs:

- Performance data and identified trends
- Internal audit results
- Status of corrective actions
- Identified systemic issues

During the review, leadership evaluates system performance, discusses identified issues, and determines required actions.

Outputs from Management Review include:

- Corrective actions
- Changes to procedures or policies
- Resource allocation decisions

All outputs are documented and entered into the corrective action tracking system. The QA Manager is responsible for tracking these actions through completion and verifying their effectiveness.

3. QMS Qualification

Wingman Flight School demonstrates QMS effectiveness through documented evidence of system operation, including:

- Performance monitoring reports
- Internal audit records
- Corrective action tracking and closure
- Management review documentation

The consistent use of the system to identify trends, implement corrective actions, and verify improvements demonstrates the effectiveness of the QMS in practice.

APPENDIX D- Sample Corrective Action Report (CAR)

Corrective Action Report (CAR)

CAR No: _____ Date: _____

Department/Area: _____ Reported by: _____

1. DESCRIPTION OF NONCONFORMITY:

(Describe what occurred)

2. IMMEDIATE ACTION / CONTAINMENT:

(Short-term mitigation to prevent further impact:

3. ROOT CAUSE ANALYSIS:

(Identify underlying cause, not just symptom)

4. CORRECTIVE ACTION (Prevent recurrence):

Action owner: _____ Due date: _____

5. VERIFICATION OF EFFECTIVENESS:

Method:

☐ Trend analysis

☐ Observation

☐ Internal evaluation

☐ Other: _____

Effective? ☐ Yes ☐ No

Verified by: _____ Date: _____

6. CLOSURE:

Closed by: _____ Date closed: _____

APPENDIX E- Sample FAA QMS Inspection Checklist

INSPECTION INFORMATION- 14 CFR §141.83

Pilot School _____
Certificate _____
Number _____
Inspector _____
Date _____
Inspection Type ☐ Initial ☐ Surveillance ☐ Tier Evaluation

EVALUATION GUIDANCE

- Tier 1: Verifies required QMS elements are documented and established
- Tier 2: Verifies the QMS is functioning effectively in practice

Documentation alone supports Tier 1.

Demonstrated use and results are required for Tier 2.

QMS General (§141.83(a))

Requirement	Tier 1 – Structural	Result	Tier 2 – Effectiveness	Result
QMS established	QMS Manual exists	☐	System actively used in operations	☐
QMS implemented	Processes defined	☐	Evidence of ongoing use	☐
QMS maintained	Documentation current	☐	Historical records demonstrate continuity	☐
Scaled to operation	Structure appropriate to size	☐	System complexity matches operation	☐

Quality Policy (§141.83(b)(1))

Requirement	Tier 1 – Structural	Result	Tier 2 – Effectiveness	Result
Policy documented	Written policy exists	☐	Policy reflected in operations	☐
Leadership approval	Approved by senior management	☐	Leadership engagement evident	☐
Communication	Policy distributed to personnel	☐	Personnel demonstrate awareness	☐

Quality Manual (§141.83(b)(1))

Requirement	Tier 1 – Structural	Result	Tier 2 – Effectiveness	Result
Manual exists	Covers all QMS elements	☐	Processes followed as described	☐
Structure defined	Roles and processes documented	☐	Records align with manual	☐
Revision control	Version tracking exists	☐	Updates reflect actual operations	☐

Document & Record Control (§141.83(b)(1))

Requirement	Tier 1 – Structural	Result	Tier 2 – Effectiveness	Result
Records maintained	Required records exist	☐	Records used for analysis	☐
Accessibility	Records retrievable	☐	Data readily accessible	☐
Protection	Controls defined	☐	Data integrity maintained	☐

Roles & Responsibilities (§141.83(b)(2))

Requirement	Tier 1 – Structural	Result	Tier 2 – Effectiveness	Result
Accountable Manager defined	Role documented	☐	Active engagement in QMS	☐
Chief Instructor defined	Responsibilities documented	☐	Implements QMS outputs	☐
QA Manager defined	Role assigned	☐	Data actively reviewed	☐
Audit independence	Policy documented	☐	Independence demonstrated	☐

Processes & Monitoring (§141.83(b)(3))

Requirement	Tier 1 – Structural	Result	Tier 2 – Effectiveness	Result
Performance metrics defined	Indicators documented	☐	Metrics produce actionable trends	☐
Training metrics tracked	Defined in system	☐	Trends identified and acted upon	☐
Operational metrics tracked	Defined	☐	Impact evaluated	☐
Data review intervals	Defined (weekly/monthly)	☐	Reviews conducted and documented	☐
Trend identification process	Criteria documented	☐	Trends escalated	☐

Personnel Competence (§141.83(b)(4))

Requirement	Tier 1 – Structural	Result	Tier 2 – Effectiveness	Result
Competence requirements defined	Training documented	☐	Personnel demonstrate capability	☐
Training program exists	Records available	☐	Training applied in operations	☐
QMS awareness	Defined	☐	Personnel understand responsibilities	☐

Corrective Action (§141.83(b)(5))

Requirement	Tier 1 – Structural	Result	Tier 2 – Effectiveness	Result
Corrective action process defined	CAR system exists	☐	CARs actively used	☐
Root cause analysis required	Defined	☐	Root causes documented	☐
Tracking system	Defined	☐	Actions tracked to completion	☐
Effectiveness verification	Defined	☐	Evidence of effectiveness documented	☐

Internal Audits (§141.83(b)(6))

Requirement	Tier 1 – Structural	Result	Tier 2 – Effectiveness	Result
Audit schedule exists	Annual plan documented	☐	Schedule followed	☐
Audit scope defined	Processes identified	☐	All areas covered	☐
Checklists used	Standardized checklists	☐	Used consistently	☐
Findings documented	Reports exist	☐	Evidence supports findings	☐
Audit follow-up	Process defined	☐	Findings linked to CAR system	☐

Management Review (§141.83(b)(7))

Requirement	Tier 1 – Structural	Result	Tier 2 – Effectiveness	Result
Annual review defined	Policy exists	☐	Review conducted	☐
Participants defined	Roles listed	☐	Attendance documented	☐
Inputs defined	Data/audits/CARs	☐	Inputs reviewed	☐
Outputs defined	Actions documented	☐	Actions tracked	☐

System Effectiveness (Tier 2)

Requirement	Tier 2 – Effectiveness	Result
Issue identified via QMS	Demonstrated	☐
Root cause documented	Demonstrated	☐
Corrective action implemented	Demonstrated	☐
Effectiveness verified	Demonstrated	☐
Improvement sustained	Demonstrated	☐

FINAL DETERMINATION**Category**

Tier 1 – Structural Compliance
Tier 2 – Performance Effectiveness

Result

☐ Pass ☐ Fail
☐ Pass ☐ Conditional ☐ Fail

APPENDIX F- Sample ICAO SARP- QMS

INTERNATIONAL CIVIL AVIATION ORGANIZATION

WORKING PAPER

Subject	Proposal to Introduce Standards and Recommended Practices on Quality Management Systems (QMS) for Approved Training Organizations (ATOs)
Presented by	
Agenda Item	
Date	

EXECUTIVE SUMMARY

This paper proposes the introduction of Standards and Recommended Practices (SARPs) on the implementation of a Quality Management System (QMS) by Approved Training Organizations (ATOs), to be incorporated into Annex 1 — *Personnel Licensing*.

The objective is to ensure the consistent delivery of high-quality training, enhance global standardization, and promote continual improvement of aviation training performance and safety outcomes

1. INTRODUCTION

- 1.1. The effectiveness of aviation training directly affects operational safety and regulatory compliance. Variations in the quality of training delivery and assessment among ATOs can lead to inconsistent competency standards among licensed personnel.
- 1.2. While ICAO Annex 15 (*Aeronautical Information Services*) and Annex 3 (*Meteorological Services*) include explicit SARPs on the implementation of Quality Management Systems, there are currently no equivalent provisions applicable to ATOs under Annex 1 (*Personnel Licensing*).
- 1.3. The absence of a standardized framework for QMS in training organizations has led to differing levels of quality assurance, documentation, and oversight across States. Introducing SARPs on QMS for ATOs would harmonize practices globally and align training quality assurance with other aviation domains.

2. DISCUSSION

- 2.1. A Quality Management System (QMS) provides a structured, process-based approach to managing training quality. When applied to ATOs, a QMS ensures that training programs, instructor competencies, facilities, and assessments consistently meet the requirements of Annex 1 and national regulations.

- 2.2. The proposed SARPs build upon the principles of ISO 9001:2015 and ICAO Doc 9830 (*Quality Management System Manual*), emphasizing documentation, auditability, corrective actions, and continual improvement.
- 2.3. The QMS complements, but does not duplicate, the Safety Management System (SMS) framework. It focuses on training quality, process control, and consistency of outputs, while SMS addresses safety risk management and assurance. Integration of QMS and SMS is encouraged to strengthen overall organizational performance.
- 2.4. States would retain flexibility to align their regulatory frameworks with ISO 9001 or equivalent standards, allowing for scalable implementation suitable for organizations of different sizes and complexities.

3. PROPOSED AMENDMENT TO ANNEX 1

- 3.1. It is proposed that Annex 1 — *Personnel Licensing* be amended to include a new **Appendix X — Quality Management System for Approved Training Organizations**, as follows:

4. APPENDIX X — QUALITY MANAGEMENT SYSTEM (QMS) FOR APPROVED TRAINING ORGANIZATIONS (ATOs)

4.1. General

4.1.1. Standard

Each Contracting State shall ensure that all Approved Training Organizations under its jurisdiction establish, implement and maintain a Quality Management System (QMS) encompassing all training and examination functions for which they are approved.

4.1.2. Standard

The QMS shall be structured, documented and maintained in a manner that ensures the effective control, monitoring, and continual improvement of all training activities.

4.1.3. Recommended Practice

The QMS should be designed in accordance with the principles of ISO 9001 or an equivalent quality assurance framework recognized by the State.

4.2. Scope and Application

4.2.1. Standard

The QMS shall cover all processes that may affect training quality, including but not limited to:

- 4.2.1.1. course design and revision;
- 4.2.1.2. instructor qualification and standardization;
- 4.2.1.3. conduct of theoretical and practical training;
- 4.2.1.4. assessment and certification;
- 4.2.1.5. records management;
- 4.2.1.6. internal audit and corrective action processes.

4.2.2. Standard

The ATO shall develop and maintain a Quality Manual defining its

quality policy, objectives, responsibilities, and procedures necessary to ensure compliance.

4.3. Responsibilities and Oversight

4.3.1. Standard

The Accountable Manager shall have ultimate responsibility for the QMS and allocate adequate resources for its effective operation.

4.3.2. Standard

A Quality Manager shall be designated to oversee the QMS, conduct audits, and report directly to senior management on quality performance.

4.3.3. Recommended Practice

The State should verify during certification and continued surveillance that the QMS is effectively implemented and records are maintained.

4.4. Auditing and Continuous Improvement

4.4.1. Standard

Internal audits shall be conducted at planned intervals to verify compliance with approved training programs and QMS requirements.

4.4.2. Standard

Findings shall result in documented corrective and preventive actions tracked to closure.

4.4.3. Recommended Practice

Audit results should be analyzed for trends and used to drive continual improvement.

4.5. Integration with Safety Management

4.5.1. Recommended Practice

Where an ATO operates a Safety Management System, the QMS should be integrated to ensure coordination between quality and safety objectives.

4.6. Training and Competence

4.6.1. Standard

Personnel responsible for training delivery and assessment shall be trained and competent in QMS principles relevant to their duties.

4.7. Certification and Recognition

4.7.1. Recommended Practice

States should encourage ATOs to obtain certification of their QMS from a recognized accreditation body.

5. IMPLEMENTATION CONSIDERATIONS

5.1. Implementation of these SARPs may be supported by the following guidance material:

5.1.1. ICAO Doc 9830 — *Quality Management System Manual*.

5.1.2. ICAO Doc 9841 — *Manual on the Approval of Training Organizations*

5.1.3. ISO 9001:2015 — *Quality Management Systems – Requirements*

5.2. A transition period of 24 months following adoption is proposed to allow States and ATOs sufficient time for implementation.

6. ACTION BY THE MEETING

6.1. The meeting is invited to:

6.1.1. note the information contained in this paper;

6.1.2. endorse the inclusion of the proposed QMS SARPs for ATOs as Appendix X to Annex 1; and recommend that ICAO initiate the amendment process through the Air Navigation Commission.

APPENDIX G- Sample Device Effectiveness Report (DER)

SAMPLE DEVICE EFFECTIVENESS REPORT (DER)

1. GENERAL INFORMATION

Applicant _____
(School/Organization) _____
Device Manufacturer _____
Device Model / Version _____
Device Type ☐ BATD ☐ AATD ☐ XR ☐ other
Device Serial / ID _____
Location of Device _____
Date of Submission _____

2. TASK / MANEUVER REQUEST

Requested Task / Maneuver _____
ACS Reference (if applicable) _____
Requested Training Credit _____
Requested Conditions ☐ Day ☐ Night ☐ IMC ☐ VMC

3. DEVICE CONFIGURATION DESCRIPTION

Describe the specific configuration used for this evaluation:

- Aircraft model represented: _____
- Avionics suite: _____
- Visual system type (projector, wrap-around, XR headset, etc.): _____
- Field of view: _____
- Motion / control loading: _____
- XR components (if applicable): _____

4. OPERATIONAL REQUIREMENTS EVALUATION

Evaluate whether the device supports the procedural and control aspects of the maneuver.

Element	Weight	Score (0–4)	Comments
Procedure execution (checklists, flow)	4	☐	_____
Avionics operation	4	☐	_____
Aircraft control response	5	☐	_____
Configuration management	4	☐	_____
Timing / sequencing	3	☐	_____

5. PERCEPTUAL REQUIREMENTS EVALUATION

Evaluate whether the device provides the visual and cognitive cues required.

Element	Weight	Score (0–4)	Comments
Runway environment visibility	5	☐	_____
Lateral/vertical path cues	5	☐	_____
Depth perception	5	☐	_____
Visual transition (IMC→VMC)	4	☐	_____
Situational awareness cues	4	☐	_____

6. XR-SPECIFIC EVALUATION (if applicable)

Element	Weight	Score (0–4)	Comments
Head tracking accuracy	4	☐	_____
Latency / lag	5	☐	_____
Spatial orientation realism	5	☐	_____
Visual stability	4	☐	_____
Human factors (fatigue/disorientation)	5	☐	_____

7. SCORING CRITERIA

Score scale:

Score	Definition
0	Not supported
1	Poor / unsuitable
2	Partial / limited
3	Adequate for training
4	High fidelity

8. WEIGHTED SCORE SUMMARY

Category	Score
Operational Score	_____
Perceptual Score	_____
XR Score (if applicable)	_____
Total Weighted Score	_____

9. STANDARDIZATION PILOT EVALUATION

Pilot Name _____
Qualification _____
Date _____
Assessment _____

- Realism of maneuver: _____
- Workload realism: _____
- Ability to teach maneuver effectively: _____
- Risk of negative training: _____

Recommendation

- ☐ Approve
☐ Approve with limitations
☐ Deny

10. LIMITATIONS / CONDITIONS

If applicable, specify:

- Environmental limits (e.g., day only): _____
- Training use limits: _____
- Operational constraints: _____

Draft Regulation

PART 141—PILOT SCHOOLS

Subpart A—General

§ 141.1 Applicability and definitions.

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, this part prescribes the requirements for issuing pilot school certificates, pilot school registration, and associated ratings, and the general operating rules applicable to a holder of a certificate or rating issued under this part. Additional requirements for pilot schools seeking to provide training courses for powered-lift certification and ratings are set forth in part 194 of this chapter.
- (b) For the purpose of this part:

Airmen certification representative (ACR). An employee of a part 141 pilot school, who is appointed by the FAA to perform administrative certification functions. They act as a representative of the FAA Administrator to review graduation records and issue temporary airman certificates to students who have successfully completed a course at a school holding Examining Authority.

Aviation Training Device (ATD). A training device, other than a full flight simulator (FFS) or flight training device (FTD), that has been evaluated, qualified, and approved by the Administrator. In general, an ATD includes a replica of aircraft instruments, equipment, panels, and controls in an open flight deck area or an enclosed aircraft flight deck. It includes the hardware necessary to represent a category and class of aircraft (or set of aircraft) operations in ground and flight conditions having the appropriate range of capabilities and systems installed in the device.

Certificated pilot School. A part 141 pilot school applicant meeting the pertinent requirements of part 141 that has been issued an Air Agency Certificate.

Check instructor. A check instructor is authorized to conduct student stage checks, end-of-course tests, and proficiency checks.

Complex airplane. An airplane that has a retractable landing gear, flaps, and a controllable pitch propeller, including airplanes equipped with an engine control system consisting of a digital computer and associated accessories for controlling the engine and propeller, such as a full authority digital engine control; or, in the case of a seaplane, flaps and a controllable pitch propeller, including seaplanes equipped with an engine control system consisting of a digital computer and associated accessories for controlling the engine and propeller, such as a full authority digital engine control.

Cross-country time.

- (i) Except as provided in paragraphs (ii) through (vii) of this definition, time acquired during flight—
 - (A) Conducted by a person who holds a pilot certificate;
 - (B) Conducted in an aircraft;
 - (C) That includes a landing at a point other than the point of departure; and
 - (D) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems to navigate to the landing point.
- (ii) For the purpose of meeting the aeronautical experience requirements (except for a rotorcraft category rating), for a private pilot certificate (except for a powered parachute category rating), a commercial pilot certificate, or an instrument rating, time acquired during a flight—
 - (A) Conducted in an appropriate aircraft;
 - (B) That includes a point of landing that was at least a straight-line distance of more than 50 nautical miles from the original point of departure; and
 - (C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems to navigate to the landing point.
- (iii) For the purpose of meeting the aeronautical experience requirements for a sport pilot certificate (except for powered parachute privileges), time acquired during a flight conducted in an appropriate aircraft that—

- (A) Includes a point of landing at least a straight line distance of more than 25 nautical miles from the original point of departure; and
 - (B) Involves, as applicable, the use of dead reckoning; pilotage; electronic navigation aids; radio aids; or other navigation systems to navigate to the landing point.
- (iv) For the purpose of meeting the aeronautical experience requirements for a sport pilot certificate with powered parachute privileges or a private pilot certificate with a powered parachute category rating, time acquired during a flight conducted in an appropriate aircraft that—
 - (A) Includes a point of landing at least a straight line distance of more than 15 nautical miles from the original point of departure; and
 - (B) Involves, as applicable, the use of dead reckoning; pilotage; electronic navigation aids; radio aids; or other navigation systems to navigate to the landing point.
- (v) For the purpose of meeting the aeronautical experience requirements for any pilot certificate with a rotorcraft category rating or an instrument-helicopter rating, time acquired during a flight—
 - (A) Conducted in an appropriate aircraft;
 - (B) That includes a point of landing that was at least a straight-line distance of more than 25 nautical miles from the original point of departure; and
 - (C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems to navigate to the landing point.
- (vi) For the purpose of meeting the aeronautical experience requirements for an airline transport pilot certificate (except with a rotorcraft category rating), time acquired during a flight—
 - (A) Conducted in an appropriate aircraft;
 - (B) That is at least a straight-line distance of more than 50 nautical miles from the original point of departure; and
 - (C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems.

Enhanced Advanced Aviation Training Device (EAATD): A training device that meets the functional standards of an AATD while incorporating the physical and software architecture of a specific make and model of aircraft. While the device is designed to replicate the flight deck and

performance characteristics of a specific airframe, it is qualified to provide training credit for the broader category and class of aircraft (e.g., Airplane Multi-Engine Land).

To be classified as an EAATD, the device must feature:

- i. **Advanced Avionics Suite:** A fully integrated, high-fidelity digital flight instrument system (e.g., G1000, Pro Line, or equivalent) with a stand-alone, updateable navigational database and dedicated hardware interface.
- ii. **Physical Flight Deck:** A semi-enclosed or fully enclosed cockpit shell with aircraft-specific physical switch consoles, power levers, and flight controls.
- iii. **Immersive Visual Environment:** A primary visual field provided by either a continuous wrap-around display system (minimum **210° horizontal by 40° vertical** field of view) or a high-resolution **VR/XR (Virtual/Extended Reality)** system with 360° spherical tracking.

End-of-Course (EOC). The final stage check that is conducted by the chief flight instructor, assistant chief flight instructor, or check instructor for a specific course. This EOC will result in eligibility for a graduation certificate. If the school holds Examining Authority, successful compilation of the EOC results in certification.

Examining Authority. The authority grants the holder of a pilot school certificate the ability to conduct end-of-course (EOC) tests of its own students for the issuance of pilot certificates and ratings without further testing by the FAA.

Flight Training. That training, other than ground training, received from an authorized instructor in flight in an aircraft.

Flight training device (FTD). A replica of aircraft instruments, equipment, panels, and controls in an open flight deck area or an enclosed aircraft flight deck replica. It includes the equipment and computer programs necessary to represent aircraft (or set of aircraft) operations in ground and flight conditions having the full range of capabilities of the systems installed in the device as described in part 60 of this chapter and the qualification performance standard (QPS) for a specific FTD qualification level.

Flight Simulation Training Device (FSTD): A device used for aircraft flight training, testing, or checking that is a full flight simulator (FFS), a flight training device (FTD), or an aviation training device (ATD).

Graduation certificate. Issued to a student after all course requirements are met and the student has successfully passed the end-of-course (EOC) test. This certificate is used as proof of eligibility for the course or rating sought.

Ground training. That training, other than flight training, received from an authorized instructor.

Instrument training. That time in which instrument training is received from an authorized instructor under actual or simulated instrument conditions.

Knowledge test. A test on the aeronautical knowledge areas required for an airman certificate or rating that can be administered in written form or by a computer.

Pilot School Rating. A part 141 pilot school is issued a rating for each of its approved courses. A part 141 pilot school rating is not to be confused with an airman certification rating, such as an instrument rating.

Pilot Training Management Manual (PTMM). A manual required by for a part 141 certificated pilot school that consist entirely of non-course specific information regarding the pilot school. Content to be included in the PTMM includes, but is not limited to safety policies and procedures, facility descriptions, aircraft information, airport information, and resources available.

Primary Flight Instruction. Training provided in an aircraft to a student or pilot towards an initial certification, additional certification, or additional rating.

Professional Pilot Track Course. The Professional Pilot Track consists of four individual courses. A course within the Professional Pilot Track is a segment that results in a certificate or rating.

Proficiency check. A check that is conducted by the Chief Flight Instructor, Assistant Chief Flight Instructor, or check instructor to determine an instructor's eligibility to teach in an approved course or aircraft.

Registered Pilot School. A pilot school, other than a certificated pilot school, who has registered with the FAA and provided the required information.

Satellite Base. A location other than the main operations base where approved ground or flight training courses are conducted.

Stage check. A required progress check designed to ensure proficiency at the completion of a stage of training. This check will be conducted by the Chief Flight Instructor, Assistant Chief Flight Instructor, or check instructor of the pilot school.

Syllabus. An outline and summary of topics to be covered in a training course, textbooks, and other material used in the course. It is a step-by-step (building block) progression of learning with provision for regular review and evaluation at prescribed stages of learning. The syllabus defines the unit of training, states by objective what the student is expected to accomplish during the unit of training, shows an organized plan for instruction (building blocks, from the simple to the complex), and dictates an evaluation process for either the unit or stages of learning. A syllabus is contained within a training course outline (TCO).

Technically advanced airplane (TAA). An airplane equipped with an electronically advanced avionics system.

Trained on. A formal process that ensures an instructor is not only familiar with but is proficient in applying and teaching to a standardized level.

Training Course Outline (TCO). A document describing the content of a particular course through a statement of objectives, description of teaching aids, definition of evaluative criteria, and indication of desired outcomes.

Training time. Training received:

- (i) In flight from an authorized instructor;
- (ii) On the ground from an authorized instructor; or
- (iii) In a flight simulator or flight training device from an authorized instructor

XR. The umbrella term that encompasses all immersive technologies, specifically Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR).

§ 141.3 Certificate required.

No person may operate as a certificated pilot school without, or in violation of, a pilot school certificate issued under this part.

§ 141.5 Requirements for a pilot school certificate.

The FAA may issue a pilot school certificate with the appropriate ratings if, the applicant—

- (a) Completes the application for a pilot school certificate on the form and in the manner prescribed by the FAA;
- (b) Meets the applicable requirements under subparts A through C of this part for the pilot school certificate and associated ratings sought;
- (c) Maintains a Quality Management System (QMS) that:
 - (1) Meets the requirements of §141.83 of this part; or
 - (2) Is certified and in good standing with ISO 9001 (International Organization for Standardization) or AS9100-series Aerospace Quality Management Standards of the IAQG (International Aerospace Quality Group); or
 - (3) Demonstrates conformity with another internationally recognized quality management standard acceptable to the Administrator.
- (d) Maintains a Safety Management System (SMS) that:
 - (1) Meets the requirements of §141.82 of this part; or
 - (2) Meets the requirements of 14 CFR part 5 and is accepted by the Administrator.

§ 141.7 Registered pilot school.

- (a) General. A registered pilot school is an entity that is registered with the FAA under this section to conduct pilot training under limited requirements. A registered pilot school is not certificated under 14 CFR part 141 and does not hold the privileges of a certificated pilot school.
- (b) Required Information. To maintain registered status under this section, a registered pilot school must provide and maintain the following information in a form acceptable to the Administrator:
 - (1) The name and contact information of the designated point of contact for the pilot school;

- (2) The name of the registered pilot school;
 - (3) The primary training location, and any auxiliary training sites;
 - (4) The description and number of each aircraft type used for pilot training;
 - (5) A statement indicating whether the school intends to pursue part 141 pilot school certification in the future;
 - (6) A statement declaring that aircraft used for training will be airworthy and maintained in accordance with applicable regulations; and
 - (7) A list of certificates and ratings that are offered.
- (c) Personnel.
- (1) A registered pilot school must have a designated point of contact. The registered pilot school is not required to designate or employ a chief instructor or assistant chief instructor.
 - (2) All flight instruction provided by a registered pilot school must be conducted by a certificated flight instructor who holds the appropriate ratings to provide the training given.
 - (3) A registered pilot school is not required to maintain personnel records.
 - (i) Individual flight instructors must keep records in accordance with §61.189.
- (d) Training Courses. A registered pilot school is not required to develop, submit, or use a training course that meets the requirements of Subpart C of this part. The requirements provided under paragraph (b)(7) constitutes the sole training documentation required for provisional status.
- (e) Privileges and Limitations.
- (1) A registered pilot school may conduct pilot training within the scope of its general course outline, provided the training meets the applicable aeronautical experience, training, and proficiency requirements of part 61.
 - (2) A registered pilot school may not hold examining authority under §141.63.
 - (3) A registered pilot school may represent itself to the public only as an “FAA-registered pilot school” and may not use the term “FAA-certified”, “FAA-approved”, or any representation implying certification under part 141.
 - (4) A registered pilot school may not advertise or imply that it holds any of the privileges associated with certificated pilot schools, including special curriculum authority or examining authority.
- (f) Oversight. FAA oversight of a registered pilot school is limited to reviewing:

- (1) Aircraft used for training remain airworthy;
 - (2) Flight instruction is provided by properly certificated flight instructors;
 - (3) The school operates within the scope and limitations of this section; and
 - (4) The school does not represent itself as an FAA-certificated pilot school.
- (g) **Duration and Continuing Eligibility.** A registered pilot school status does not expire; however, each registered pilot school must, at least once every 12 calendar months, submit a self-declaration in a form and manner acceptable to the Administrator affirming that the school continues to meet the requirements of this section. Failure to submit the annual self-declaration, or failure to continue meeting the requirements of this section, may result in revocation of registered pilot school status.
- (h) **Basic Quality and Safety Practices.** A registered pilot school must implement the following minimum quality and safety practices:
- (1) **Quality Practices**
 - (i) Documentation of student training issues/trends identified during instruction and the corrective actions taken.
 - (ii) A brief, documented self-review conducted at least every twelve months evaluating training effectiveness and noting any changes/improvements made.
 - (2) **Safety Practices**
 - (i) A list of known or newly identified hazards associated with the school's operations.
 - (ii) A basic preflight risk assessment process must be used for each training flight.
 - (iii) Documentation of safety concerns, accidents, incidents, or hazards and the steps taken to mitigate occurrence or recurrence.

§ 141.9 Examining authority privileges

- (a) The FAA shall issue the privilege of examining authority to a pilot school for a training course listed in 141.11 of this section, including combined appendices, if:
- (1) The pilot school and its training course meet the requirements of subpart D of this part.
 - (2) The pilot school maintains an FAA-accepted Quality Management System (QMS) in accordance with §141.83(b)(2).
- (b) A pilot school that no longer maintains a Quality Management System meeting the requirements of § 141.83(b)(2) is not eligible to continue

exercising examining authority privileges. In such cases, the FAA may limit, suspend, or terminate examining authority privileges, in whole or in part, until the pilot school demonstrates compliance with paragraph (a) of this section.

- (c) The FAA may restore examining authority privileges when the pilot school demonstrates that it meets the requirements of paragraph (a) of this section.
- (d) The FAA retains the authority to modify, limit, suspend, or terminate examining authority privileges at any time if the FAA determines that the pilot school's level of compliance, internal controls, or quality system effectiveness no longer supports the continued exercise of examining authority.

§ 141.11 Pilot school ratings.

- (a) The ratings listed in paragraph (b) of this section may be issued to a pilot school certificate, provided the applicant meets the requirements of § 141.5 of this part;
- (b) A pilot school may be authorized to conduct the following courses:
 - (1) Certification and rating courses. (Appendixes A through L).
 - (i) Sport Pilot Course.
 - (ii) Private pilot course.
 - (iii) Instrument rating course.
 - (iv) Commercial pilot course.
 - (v) Airline transport pilot course.
 - (vi) Flight instructor course.
 - (vii) Flight instructor additional class rating course.
 - (viii) Flight instructor instrument initial course.
 - (ix) Flight instructor instrument add-on course.
 - (x) Ground instructor course.
 - (xi) Additional aircraft category or class rating course.
 - (xii) Aircraft type rating course.
 - (2) Special preparation courses. (Appendix M).
 - (i) Pilot refresher course.
 - (ii) Flight instructor refresher course.
 - (iii) Ground instructor refresher course.
 - (iv) Agricultural aircraft operations course.
 - (v) Rotorcraft external-load operations course.
 - (vi) Special operations course.
 - (vii) Test pilot course.
 - (viii) Flight instructor enhanced qualification training program.
 - (3) Pilot ground school course. (Appendix N).

- (4) Combined private pilot certification and instrument rating course. (Appendix O).
- (5) Professional pilot track (Appendix P).
- (6) Airline transport pilot certificate training program (ATP/CTP) (Appendix Q)
- (7) Airline transport pilot enhanced qualification program (EQP) Phase 1 (Appendix R)
- (8) Consensus standard-based courses. (Appendix S).
- (c) Combination of certification and rating course appendices.
 - (1) Notwithstanding the individual course requirements specified in Appendixes A through R of this part, a pilot school may request approval to combine two or more certification or rating courses listed in paragraph (b)(1) of this section into a single integrated course, provided the combined course:
 - (i) Meets the scope, objectives, and minimum performance standards of each appendix applicable to the certifications or ratings sought;
 - (ii) Ensures that all required ground and flight training elements for each included certification or rating remain identifiable, trackable, and subject to the school's approved quality management system; and
 - (iii) Provides a training syllabus that clearly shows the order of instruction, method of integration, and how the combined structure maintains or improves training effectiveness.
 - (2) The FAA Administrator may approve a combined course upon determining that the integration:
 - (i) Provides an equivalent or higher level of safety, training quality, and proficiency compared to conducting each course separately;
 - (ii) Does not reduce required training hours or completion standards unless expressly authorized by the corresponding appendix; and
 - (iii) Enables the school to demonstrate continuing compliance with §§ 141.55, 141.63, and 141.101, as applicable.
 - (3) A pilot school conducting a combined course under this paragraph must maintain training records that identify a student's progress toward each individual certification or rating included within the integrated curriculum;

- (4) Nothing in this paragraph permits the combination of courses or appendices outside those listed in § 141.11(b)(1), except as otherwise authorized in this part; and
 - (5) A pilot school conducting a combined course under this paragraph must meet and maintain the Quality Management System requirements of § 141.83(b)(2), as demonstrated by documented evidence that the system is implemented, monitored, reviewed, and effective in practice.
- (d) Reduced-Time Authority for Certification and Rating Courses
- (1) Notwithstanding the minimum ground and flight training time requirements specified in Appendixes A through R of this part, a pilot school may request approval to conduct a certification or rating course with reduced total training time, provided the school qualifies for and maintains examining authority in accordance with § 141.55(e).
 - (2) Reduced-time authority under this paragraph applies only to the total training time specified in the applicable appendix. Required subject areas, training elements, stage checks, end-of-course evaluations, and performance standards must not be eliminated or substantively altered unless expressly authorized in the corresponding appendix.
 - (3) The Administrator may approve reduced-time authority upon determining that the school:
 - (i) Meets and continues to meet the requirements of § 141.55(e);
 - (ii) Demonstrates through its approved quality management system that student performance, proficiency, and safety outcomes are equivalent to or exceed those achieved under the minimum time requirements of the applicable appendix; and
 - (iii) Maintains compliance with § 141.83(b)(2).
 - (4) A pilot school operating under reduced-time authority must maintain training records that clearly identify student progress and completion within the reduced-time structure and must demonstrate ongoing monitoring, internal review, and corrective action through its approved quality management system.
 - (5) Reduced-time authority may be suspended or revoked if the Administrator determines that the school no longer satisfies § 141.55(e), fails to maintain an effective quality management system

under § 141.83(b)(2), or demonstrates a decline in student performance, proficiency, or safety outcomes.

§ 141.13 Application for issuance or amendment.

- (a) Application for an original certificate and rating, or an additional rating, under this part must be made on a form and in a manner prescribed by the Administrator.
- (b) Application for the issuance or amendment of a certificate or rating must be submitted in a form and manner acceptable to the administrator.

§ 141.17 Duration of certificate.

- (a) Unless surrendered, suspended, or revoked, a pilot school's certificate expires:
 - (1) Except as provided in paragraph (b) of this section, on the date that any change in ownership of the school occurs; or
 - (2) Upon notice by the Administrator that the school has failed to meet the requirements listed under § 141.5.
- (b) A change in the ownership of a pilot school does not terminate that school's certificate if, within 30 days after the date that any change in ownership of the school occurs:
 - (1) Application is made for an appropriate amendment to the certificate; and
 - (2) No change in the Quality Management System (QMS), Safety Management System (SMS), facilities, or approved training courses is involved.

§ 141.18 Carriage of narcotic drugs, marijuana, and depressant or stimulant drugs or substances.

If the holder of a certificate issued under this part permits any aircraft owned or leased by that holder to be engaged in any operation that the certificate holder knows to be in violation of § 91.19(a) of this chapter, that operation is a basis for suspending or revoking the certificate.

§ 141.19 Display of certificate.

- (a) Each holder of a pilot school certificate must display that certificate in a place in the school that is normally accessible to the public and is not obscured.
- (b) A certificate must be made available for inspection upon request by:
 - (1) The Administrator;
 - (2) An authorized representative of the National Transportation Safety Board; or
 - (3) A Federal, State, or local law enforcement officer.

§ 141.21 Inspections.

Each holder of a certificate issued under this part must allow the Administrator to inspect its personnel, facilities, equipment, and records to determine the certificate holder's:

- (a) Eligibility to hold its certificate in accordance with the requirements set forth in § 141.5;
- (b) Compliance with the Federal Aviation Regulations.
- (c) Inspections will be managed and conducted by the FAA part 141 Central Management Office (CMO). The Central Management Office (CMO) may:
 - (1) inspect a pilot school using electronic means when possible; and/or
 - (2) Delegate site inspections to a local FSDO.
 - (a) Delegated site inspections must be completed within 30 days of request.

§ 141.23 Advertising limitations.

- (a) The holder of a pilot school certificate may not make any statement relating to its certification and ratings that is false or designed to mislead any person contemplating enrollment in that school.
- (b) The holder of a pilot school certificate may not advertise that the school is certificated unless it clearly differentiates between courses that have been approved under part 141 of this chapter and those that have not been approved under part 141 of this chapter.
- (c) The holder of a pilot school certificate must promptly remove:
 - (1) From vacated premises, all signs indicating that the school was certificated by the Administrator; or
 - (2) All indications (including physical signage, internet based media, etc), wherever located, that the school is certificated by the Administrator when its certificate has been surrendered, suspended, or revoked.
- (d) A registered pilot school must comply with the advertising and representation limitations prescribed in § 141.7(e)(3) and (4), including restrictions on the use of terms, descriptions, or representations that imply FAA certification or approval beyond that authorized by registration.

§ 141.25 Business office and operations base.

- (a) Each holder of a pilot school certificate must maintain a principal business office with a mailing address in the name shown on its certificate.
- (b) The facilities and equipment at the principal business office must be adequate to maintain the files and records required to operate the business of the school.

- (c) A certificated pilot school may share business or administrative office facilities with another certificated pilot school operating under this part, provided that each pilot school:
 - (1) Retains independent management authority and responsibility for its operations; and
 - (2) Ensures that all student records and records required by this part remain under the exclusive control of the certificate holder, with safeguards in place to prevent unauthorized access.
- (d) Before changing the location of the principal business office or the operations base, each certificate holder must notify the FAA 141 Central Management Office (CMO), and the notice must be:
 - (1) Submitted to the administrator at least 30 days before the change of location; and
 - (2) Accompanied by any amendments needed for the certificate holder's approved Pilot Training Management Manual (PTMM).
- (e) A certificate holder may conduct training at an operations base other than the one specified in its certificate, if:
 - (1) The Administrator has approved the base for use by the certificate holder; and
 - (2) The Pilot Training Management Manual (PTMM) and any needed amendments have been provided to the Administrator for use at that base.

§ 141.26 Training agreements.

- (a) A training center certificated under part 142 of this chapter may provide the training, testing, and checking for pilot schools certificated under this part and is considered to meet the requirements of this part, provided—
 - (1) There is a training agreement between the certificated training center and the pilot school;
 - (2) The training, testing, and checking provided by the certificated training center is approved and conducted under part 142;
 - (3) The pilot school certificated under this part obtains the Administrator's approval for a training course outline that includes the training, testing, and checking to be conducted under this part and the training, testing, and checking to be conducted under part 142; and
 - (4) Upon completion of the training, testing, and checking conducted under part 142, a copy of each student's training record is forwarded to the part 141 school and becomes part of the student's permanent training record.

- (b) An institution of higher education that holds a pilot school certificate under this part and a letter of authorization issued under § 61.169 of this chapter may outsource the flight training required by § 61.169 to another pilot school certificated under this part, provided a training agreement is in place. The institution of higher education must conduct the required ground training under its pilot school certificate issued under this part, and the pilot school providing flight training must conduct that training under this part in accordance with its approved training course.

§ 141.29 [Reserved]

Subpart B—Personnel, Aircraft, and Facilities Requirements

§ 141.31 Applicability.

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, this subpart prescribes:
- (1) The personnel and aircraft requirements for a pilot school certificate; and
 - (2) The facilities that a pilot school must have available on a continuous basis.
- (b) As used in this subpart, to have continuous use of a facility the school must have ownership, or a written, legally binding agreement (including a lease) granting the pilot school the right to use the facility effective at the time the certificate is issued.

§ 141.33 Personnel.

- (a) A pilot school must meet the following personnel requirements:
- (1) Except as provided in paragraph 4 of this section, each pilot school must have adequate personnel, including certificated flight instructors, certificated ground instructors, or holders of a commercial pilot certificate with a lighter-than-air rating, and a chief instructor for each approved course of training who is qualified and competent to perform the duties to which that instructor is assigned.
 - (2) If the school employs dispatchers, aircraft handlers, and line and service personnel, then it must instruct those persons in the procedures and responsibilities of their employment.
 - (3) Except as provided in paragraph 4 of this section, each instructor to be used for ground or flight training must hold a flight instructor certificate, ground instructor certificate, or commercial pilot certificate with a lighter-than-air rating, as appropriate, with ratings for the approved course of training and any aircraft used in that course.

- (4) Each instructor used for the airline transport pilot certification training program in § 61.156 of this chapter or an airline transport pilot enhanced qualification program under this part must:
 - (i) Hold a flight instructor certificate, ground instructor certificate with ratings for the approved course of training, or complete at least 8 hours of ground training and satisfactorily complete a written test on the following subject matter:
 - (1) Instruction methods and techniques.
 - (2) Training policies and procedures.
 - (3) The fundamental principles of the learning process.
 - (4) Instructor duties, privileges, responsibilities, and limitations.
 - (ii) Hold an airline transport pilot certificate with an airplane category multiengine class rating;
 - (iii) Have at least 2 years of experience as a pilot-in-command in operations conducted under § 91.1053(a)(2)(i) or § 135.243(a)(1) of this chapter, or as a pilot-in-command or second in command in any operation conducted under part 121 of this chapter; and
 - (iv) If providing training in a flight simulation training device, have received training and evaluation within the preceding 12 months from the certificate holder on—
 - (1) Proper operation of flight simulator and flight training device controls and systems;
 - (2) Proper operation of environmental and fault panels,
 - (3) Data and motion limitations of simulation;
 - (4) Minimum equipment requirements for each curriculum; and
 - (5) The maneuvers that will be demonstrated in the flight simulation training device.
- (b) A pilot school must designate a chief instructor for each of the school's approved training courses, who must meet the requirements of § 141.35 of this part.
- (c) When necessary, a pilot school may designate a person to be an assistant chief instructor for an approved training course, provided that person meets the requirements of § 141.36 of this part.
- (d) A pilot school may designate a person to be a check instructor for conducting student stage checks, end-of-course tests, and instructor proficiency checks, provided that person meets the requirements of § 141.37 of this part.

- (e) A person, as listed in this section, may serve in more than one position for a school, provided that person is qualified for each position.

§ 141.34 Conflict of Interest.

- (a) No holder of a pilot school certificate may knowingly employ or make a contractual arrangement which permits an individual to act as an agent or representative of the certificate holder in any matter before the Federal Aviation Administration if the individual, in the preceding 2 years—
 - (1) Served as, or was directly responsible for the oversight of, a Flight Standards Service aviation safety inspector; and
 - (2) Had direct responsibility to inspect, or oversee the inspection of, the operations of the certificate holder.
- (b) For the purpose of this section, an individual shall be considered to be acting as an agent or representative of a certificate holder in a matter before the agency if the individual makes any written or oral communication on behalf of the certificate holder to the agency (or any of its officers or employees) in connection with a particular matter, whether or not involving a specific party and without regard to whether the individual has participated in, or had responsibility for, the particular matter while serving as a Flight Standards Service aviation safety inspector.
- (c) An individual may not serve as an FAA inspector or otherwise exercise direct regulatory oversight of a pilot school if that individual has been employed by, or served as a contractor or consultant to, that pilot school, in a manner that presents an actual or apparent conflict of interest.
 - (1) A pilot school that believes an actual or apparent conflict of interest exists with respect to its assigned FAA oversight may submit a written request for review to the FAA office responsible for oversight of the pilot school.

§ 141.35 Chief instructor qualifications.

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, to be eligible for designation as a chief instructor for a course of training, a person must meet the following requirements:
 - (1) Hold a commercial pilot certificate or an airline transport pilot certificate, and, except for a chief instructor for a course of training for a lighter-than-air rating, the Airline Transport Pilot Certification Training Program, and the Airline Transport Pilot Enhanced Qualification Program, a current flight instructor certificate. The certificates must contain the appropriate aircraft category and class ratings for the category and class of aircraft used in the course and

- an instrument rating, if an instrument rating is required for enrollment in the course of training;
- (2) Meet the pilot-in-command recent flight experience requirements of § 61.57 of this chapter;
- (3) Pass a knowledge test on—
 - (i) Teaching methods;
 - (ii) Applicable provisions of the “Aeronautical Information Manual”;
 - (iii) Applicable provisions of parts 61, 91, and 141 of this chapter; and
 - (iv) The objectives and approved course completion standards of the course for which the person seeks to obtain designation.
- (4) Pass a proficiency test on instructional skills and ability to train students on the flight procedures and maneuvers appropriate to the course;
- (5) Except for a course of training for gliders, balloons, or airships, the chief instructor must meet the applicable requirements in paragraphs (b), (c), (d), and (e) of this section; and
- (6) A chief instructor for a course of training for gliders, balloons or airships is only required to have 40 percent of the hours required in paragraphs (b) and (e) of this section.
- (b) For a course of training leading to the issuance of a sport or private pilot certificate or rating, a chief instructor must have:
 - (1) At least 1,000 hours as pilot-in-command; and
 - (2) Primary flight training experience, acquired as either a certificated flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least—
 - (i) 2 years and a total of 500 flight hours; or
 - (ii) 1,000 flight hours.
- (c) For a course of training leading to the issuance of an instrument rating or a rating with instrument privileges, a chief instructor must have:
 - (1) At least 100 hours of flight time under actual or simulated instrument conditions;
 - (2) At least 1,000 hours as pilot-in-command; and
 - (3) Instrument flight instructor experience, acquired as either a certificated flight instructor-instrument or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least—
 - (i) 2 years and a total of 250 flight hours; or

- (ii) 400 flight hours.
- (d) For an Airline Transport Pilot Certification Training Program (ATP CTP) course or Airline Transport Pilot Enhanced Qualification Program (EQP) course, a chief instructor must have:
 - (1) An airline transport pilot certificate with appropriate category and class ratings;
 - (2) Operational leadership experience acceptable to the Administrator, acquired while serving as a Chief Pilot, Assistant Chief Pilot, Director of Operations, Training Captain, Check Airman, or equivalent position, in operations conducted under 14 CFR part 121, part 135, or part 91K; or flight training experience, acquired as either a certificated flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least 3,000 hours of total flight time, including at least 1,500 hours as pilot-in-command.
 - (3) 2 years of experience as a pilot-in-command in operations conducted under § 91.1053(a)(2)(i) or § 135.243(a)(1) of this chapter, or as a pilot-in-command or second in command in any operation conducted under part 121 of this chapter
- (e) For a course of training other than an Airline Transport Pilot Certification Training Program (ATP CTP), an Airline Transport Pilot Enhanced Qualification Program (EQP), or a course leading to the issuance of a sport or private pilot certificate or rating, or an instrument rating or a rating with instrument privileges, a chief instructor must have:
 - (1) At least 2,000 hours as pilot-in-command; and
 - (2) Flight training experience, acquired as either a certificated flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least—
 - (i) 3 years and a total of 1,000 flight hours; or
 - (ii) 1,500 flight hours.
- (f) To be eligible for designation as chief instructor for a ground school course, a person must have 1 year of experience as a ground school instructor at a certificated pilot school.

§ 141.36 Assistant chief instructor qualifications.

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, to be eligible for designation as an assistant chief instructor for a course of training, a person must meet the following requirements:
 - (1) Hold a commercial pilot or an airline transport pilot certificate and, except for the assistant chief instructor for a course of training

- solely for a lighter-than-air rating, a current flight instructor certificate. The certificates must contain the appropriate aircraft category, class, and instrument ratings if an instrument rating is required by the course of training for the category and class of aircraft used in the course;
- (2) Meet the pilot-in-command recent flight experience requirements of § 61.57 of this chapter;
 - (3) Pass a knowledge test on—
 - (i) Teaching methods;
 - (ii) Applicable provisions of the “Aeronautical Information Manual”;
 - (iii) Applicable provisions of parts 61, 91, and 141 of this chapter; and
 - (iv) The objectives and approved course completion standards of the course for which the person seeks to obtain designation.
 - (4) Pass a proficiency test on the flight procedures and maneuvers appropriate to that course; and
 - (5) Meet the applicable requirements in paragraphs (b), (c), and (d) of this section. However, an assistant chief instructor for a course of training for gliders, balloons, or airships is only required to have 40 percent of the hours required in paragraphs (b) and (d) of this section.
- (b) For a course of training leading to the issuance of a sport or private pilot certificate or rating, an assistant chief instructor must have:
- (1) At least 500 hours as pilot-in-command; and
 - (2) Flight training experience, acquired as either a certificated flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least—
 - (i) 1 year and a total of 250 flight hours; or
 - (ii) 500 flight hours.
- (c) For a course of training leading to the issuance of an instrument rating or a rating with instrument privileges, an assistant chief flight instructor must have:
- (1) At least 50 hours of flight time under actual or simulated instrument conditions;
 - (2) At least 500 hours as pilot-in-command; and
 - (3) Instrument flight instructor experience, acquired as either a certificated flight instructor-instrument or an instructor in a military

pilot flight training program, or a combination thereof, consisting of at least—

- (i) 1 year and a total of 125 flight hours; or
 - (ii) 200 flight hours.
- (d) For a course of training other than one leading to the issuance of a sport or private pilot certificate or rating, or an instrument rating or a rating with instrument privileges, an assistant chief instructor must have:
 - (1) At least 1,000 hours as pilot-in-command; and
 - (2) Flight training experience, acquired as either a certificated flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least—
 - (i) 1 1/2 years and a total of 500 flight hours; or
 - (ii) 750 flight hours.
- (e) To be eligible for designation as an assistant chief instructor for a ground school course, a person must have 6 months of experience as a ground school instructor at a certificated pilot school.

§ 141.37 Check instructor qualifications.

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, a pilot school must develop a check instructor training syllabus and shall designate a check instructor to conduct student stage checks, end-of-course tests, and instructor proficiency checks under this part, if the person meets the training and eligibility requirements of this section.
- (b) A pilot school must develop and use an approved syllabus to provide training for check instructors to conduct and maintain currency for end-of-course checks, stage checks within a course of training, and instructor proficiency checks. This syllabus must include the following training:
 - (1) Initial check instructor training must include training on a specific stage check, end-of-course check and instructor proficiency check:
 - (i) Expectations, authority, and limitations of the check instructor, including scope of evaluation and prohibitions on instruction during checks;
 - (ii) Professionalism, impartiality, and ethics;
 - (iii) Evaluating eligibility of the applicant;
 - (iv) Review of the content and requirements for the appropriate stage check, end-of-course test, or instructor proficiency check.;
 - (v) Review of the Airmen Certification Standards (ACS) requirements and standards as appropriate;

- (vi) Review of a sample plan of action for the check;
 - (vii) Standardized and objective assessment and evaluation techniques;
 - (viii) Managing test outcomes and discrepancies;
 - (ix) Constructive debriefing and remediation techniques; and
 - (x) Documentation and record keeping
- (2) Training required to be authorized to conduct an additional stage check, end-of-course test, or instructor proficiency check must include:
- (i) Evaluating eligibility of the applicant/student;
 - (ii) Review of the content and requirements for the appropriate stage check, end-of-course test, or instructor proficiency check;
 - (iii) Review of the ACS requirements and standards as appropriate;
 - (iv) Review of a sample plan of action for the check; and
 - (v) Documentation and record keeping.
- (3) Recurrency training required to maintain privileges to conduct stage checks, end-of-course tests, or instructor proficiency checks must include:
- (i) Review of professionalism, impartiality, and ethics;
 - (ii) Review of standardized assessment and evaluation techniques;
 - (iii) Review constructive debriefing and remediation techniques;
 - (iv) Changes and updates to the Airmen Certification Standards, pilot school syllabi, and any other document or manual;
 - (v) Review of documentation and record keeping;
 - (vi) Other areas deemed necessary by the chief instructor;
 - (vii) Additional training for check instructors authorized to conduct end-of-course tests;
 - (1) Review of expectations and limitations of the end-of-course check instructor;
 - (2) Review of the end-of-course test content, requirements, and Airmen Certification Standards requirements; and
 - (3) Review of managing test outcomes and discrepancies;
- (c) For checks and tests that relate to either flight or ground training, the person must pass a test, given by the chief instructor or assistant chief instructor on—

- (1) Applicable tasks listed in paragraph b of this part;
 - (2) Applicable provisions of the “Aeronautical Information Manual”;
 - (3) Applicable provisions of parts 61, 91, and 141 of this chapter; and
 - (4) The objectives and course completion standards of the approved training course for the designation sought.
- (d) For checks and tests that relate to a flight training course, the person must—
 - (1) Meet the requirements in paragraph (c) of this section;
 - (2) Hold a commercial pilot certificate or an airline transport pilot certificate and, except for a check instructor for a course of training for a lighter-than-air rating, a current flight instructor certificate. The certificates must contain the appropriate aircraft category, class, and instrument ratings for the category and class of aircraft used in the course;
 - (3) Meet the pilot-in-command recent flight experience requirements of § 61.57 of this chapter; and
 - (4) Pass a proficiency test, given by the chief instructor or assistant chief instructor, on the flight procedures and maneuvers of the approved training course for the designation sought.
- (e) For checks and tests that relate to ground training, the person must—
 - (1) Meet the requirements in paragraph (c) of this section;
 - (2) Except for a course of training for a lighter-than-air rating, hold either a current flight instructor certificate with the appropriate category and class of aircraft, or ground instructor certificate with appropriate ratings, to be used in the course of training; and
 - (3) For a course of training for a lighter-than-air rating, hold a commercial pilot certificate with a lighter-than-air category rating and the appropriate class rating.
- (f) A person who meets the eligibility requirements in paragraph (c) and (d) of this section shall be designated by the chief instructor to conduct student stage checks, end-of-course tests, and instructor proficiency checks.
- (g) Each check instructor must complete recurrent training in the areas specified in this section at least once every 12 calendar months, unless the instructor has completed initial check instructor training to conduct stage checks or end-of-course tests within the preceding 12 calendar months.
- (h) A check instructor may not conduct a stage check or an end-of-course test of any student for whom the check instructor has:
 - (1) Served as the principal instructor; or
 - (2) Recommended for a stage check or end-of-course test.

§ 141.38 Reserved.**§ 141.39 Aircraft.**

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, when the school's training facility is located within the U.S., a pilot school must show that each aircraft used by the school for flight training and solo flights:
 - (1) Is a civil aircraft of the United States;
 - (2) Is certificated with a standard airworthiness certificate, a primary airworthiness certificate, or a special airworthiness certificate in the light-sport category unless the FAA determines otherwise because of the nature of the approved course;
 - (3) Is maintained and inspected in accordance with the requirements for aircraft operated for hire under part 91, subpart E, of this chapter;
 - (4) Has two pilot stations with engine-power controls that can be easily reached and operated in a normal manner from both pilot stations (for flight training); and
 - (5) Is equipped and maintained for IFR operations if used in a course involving IFR en route operations and instrument approaches. For training in the control and precision maneuvering of an aircraft by reference to instruments, the aircraft may be equipped as provided in the approved course of training.
- (b) When the school's training facility is located outside the U.S. and the training will be conducted outside the U.S., an applicant for a pilot school certificate or provisional pilot school certificate must show that each aircraft used by the school for flight training and solo flights:
 - (1) Is either a civil aircraft of the United States or a civil aircraft of foreign registry;
 - (2) Is certificated with a standard or primary airworthiness certificate or an equivalent certification from the foreign aviation authority;
 - (3) Is maintained and inspected in accordance with the requirements for aircraft operated for hire under part 91, subpart E of this chapter, or in accordance with equivalent maintenance and inspection from the foreign aviation authority's requirements;
 - (4) Has two pilot stations with engine-power controls that can be easily reached and operated in a normal manner from both pilot stations (for flight training); and
 - (5) Is equipped and maintained for IFR operations if used in a course involving IFR en route operations and instrument approaches. For training in the control and precision maneuvering of an aircraft by

reference to instruments, the aircraft may be equipped as provided in the approved course of training.

§ 141.41 Flight Simulation Training Devices (FSTDs), training aids, and equipment.

Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, a pilot school must show that its Flight Simulation Training Devices (FSTDs), training aids, and equipment meet the following requirements:

- (a) **Full flight simulators and flight training devices.** Each full flight simulator and flight training device used to obtain flight training credit in an approved pilot training course curriculum must be:
 - (1) Qualified under part 60 of this chapter, or a previously qualified device, as permitted in accordance with § 60.17 of this chapter; and
 - (2) Approved by the Administrator for the tasks and maneuvers specified in the approved pilot school curriculum, based on the qualified capabilities of the device.
- (b) **Aviation training devices.** Each Basic Aviation Training Device (BATD) or Advanced Aviation Training Device (AATD) used to obtain flight training credit in an approved pilot training course curriculum must be approved by the Administrator and authorized for such use in accordance with the applicable Letter of Authorization (LOA). The Administrator may approve additional tasks and maneuvers for such use through amendment of the LOA, when supported by the device's evaluated performance and the approved curriculum.
- (c) **Enhanced Advanced Aviation Training Devices (EAATDs).** An Enhanced Advanced Aviation Training Device (EAATD) is an Advanced Aviation Training Device (AATD) that incorporates an enhanced visual system. An EAATD used to obtain flight training credit in an approved pilot training course curriculum must:
 - (1) Meet all evaluation, qualification, and approval requirements applicable to an Advanced Aviation Training Device (AATD) under paragraph (b) of this section and be authorized for use under a current Letter of Authorization (LOA);
 - (2) Be equipped with either—
 - (i) A visual system providing a minimum field of view of 210° horizontal by 40° vertical; or
 - (ii) An integrated Extended Reality (XR) visual system that provides an equivalent or greater level of immersive visual fidelity;

- (3) Have the enhanced visual capability evaluated and approved by the Administrator for the specific tasks and maneuvers for which additional credit, if any, is sought.
- (d) **Extended Reality (XR) training systems.** An extended reality training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), may be used to support ground or flight training in an approved pilot training course curriculum, provided that—
 - (1) The system is approved by the Administrator or validated in accordance with an accepted consensus standard recognized by the Administrator for the intended training use;
 - (2) The system accurately represents the procedures, tasks, and operational environment applicable to the training being conducted;
 - (3) The system is used only for those tasks and credit, if any, specifically authorized by the Administrator; and
 - (4) The pilot school maintains records and documentation demonstrating continued suitability and effectiveness of the system for the approved training purpose.
- (e) Training aids and equipment. Each training aid and item of equipment, including any audiovisual aid, projector, procedural training aid, chart, aircraft component, electronic record keeping system, electronic logbook, tablet, computer, wearable display, vision-enhancing device, or other advanced electronic training aid, listed in the approved Pilot Training Management Manual (PTMM), must be accurate, current, and relevant to the course for which it is used.

§ 141.43 Pilot briefing areas.

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, A pilot school must show that it has continuous use of a briefing area located at each airport at which training flights originate, that is:
 - (1) Adequate to shelter students waiting to engage in their training flights; and
 - (2) Arranged and equipped for the conduct of pilot briefings; and
- (b) A briefing area required by paragraph (a) of this section may be shared with another pilot school, provided that the briefing area is not used concurrently by more than one pilot school during the period it is required for use by either pilot school.

§ 141.45 Ground training facilities.

Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, A pilot school must show that:

- (a) Except as provided in paragraph (c) of this section, each room, training booth, or other space used for instructional purposes must be adequately heated, lighted, ventilated, and maintained to conform to local building, sanitation, and health codes.
- (b) Except as provided in paragraph (c) of this section, the training facility is so located that the students in that facility are not distracted by the training conducted in other rooms, or by flight and maintenance operations at the airport.
- (c) If a training course is conducted through an internet-based medium, distance-learning, or other electronic instructional delivery method, the holder of a pilot school certificate that provides such training need not comply with paragraphs (a) and (b) of this section but must maintain in current status a permanent business location and business telephone number.

Subpart C—Pilot School Documentation, Training Course Outline and Curriculum**§ 141.51 Applicability.**

Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, this subpart prescribes the required pilot school documentation, curriculum and course outline requirements for the issuance of a pilot school certificate and ratings.

§ 141.52 Pilot Training Management Manual (PTMM).

- (a) Each certificated pilot school must develop, maintain, and comply with a Pilot Training Management Manual (PTMM) acceptable to the Administrator.
- (b) The Pilot Training Management Manual (PTMM) must describe the pilot school's:
 - (1) Quality Management System in accordance with 141.83;
 - (2) Safety Management System (SMS) in accordance with 141.82;
 - (3) If applicable, policies and procedures specifically related to examining authority;
 - (4) General organizational policies and procedures governing training, evaluation, and oversight;
 - (5) Instructor qualification, standardization, and training requirements;
 - (6) A description of each room used for ground training, including the room's size and the maximum number of students that may be

- trained in the room at one time, unless the course is provided via an internet-based training medium;
- (7) A description of each type of training aid and/or equipment used for ground training for each course;
- (8) A description of each Flight Simulation Training Device (FSTD) and/or extended reality (XR) training system used for training in each course;
- (9) A description of the type of aircraft including any special equipment used for each course and phase of training;
- (c) The Pilot Training Management Manual (PTMM) may be maintained in electronic form and must be kept current and accessible to the Administrator.
- (d) The pilot school must ensure that personnel with assigned responsibilities are provided access and that they are trained on and comply with the applicable portions of the manual.

§ 141.53 Approval procedures for a training course: General.

- (a) General. A pilot school may not conduct training in a certification or rating course unless the training course outline has been approved, deemed approved under paragraph (b)(4) or (c)(2)(ii), or amended in accordance with paragraph (c)(4) of this section.
- (b) Initial training course approval
 - (1) An application for the approval of an initial training course must be submitted in a manner acceptable to the Administrator to the FAA's part 141 Central Management Office (CMO).
 - (2) An application for the approval of an initial training course must be submitted at least 30 days before any training under that course, or any amendment thereto, is scheduled to begin. For purposes of this section, an application is considered complete when all materials required by this part have been submitted.
 - (3) Within 30 calendar days after receipt of a complete application submitted under paragraph (b)(1) of this section, the Administrator must—
 - (i) Approve the application;
 - (ii) Deny the application in writing, stating the specific reasons for denial; or
 - (iii) Notify the applicant in writing of any deficiencies that must be corrected before approval may be granted.
 - (4) If the Administrator does not take one of the actions described in paragraphs (b)(3)(i) through (iii) within 30 calendar days of receipt

of a complete application, the training course will be considered approved as submitted.

(c) Amendment to training courses

- (1) Except as provided in paragraph (4) of this section, an application for the approval of an amended training course must be submitted in a manner acceptable to the Administrator to the FAA 141 Central Management Office (CMO).
 - (2) Except as provided in paragraph (4) of this section, an application for the approval of an amended training course must be submitted at least 30 days before any training under that course, or any amendment thereto, is scheduled to begin. For purposes of this section, an application is considered complete when all materials required by this part have been submitted.
 - (i) Within 30 calendar days after receipt of a complete application submitted under paragraph (c)(2) of this section, the Administrator must—
 - (A) Approve the application;
 - (B) Deny the application in writing, stating the specific reasons for denial; or
 - (C) Notify the applicant in writing of any deficiencies that must be corrected before approval may be granted.
 - (ii) If the Administrator does not take one of the actions described in paragraphs (c)(2)(i)(A) through (C) within 30 calendar days of receipt of a complete application, the training course amendment will be considered approved as submitted.
 - (3) Minor editorial and typographical changes do not require FAA amendment approval, provided the school notifies the FAA within 30 days of their insertion.
 - (4) Pilot schools that meet the requirements of 141.83(b)(2) retain the ability to amend a training course without FAA authorization provided that the pilot school notifies the FAA Central Management Office (CMO) within 30 days of the change.
 - (i) The pilot school must maintain documented evidence, derived from its Quality Management System, that supports each amendment to a training course; and
 - (ii) The pilot school shall make evidence of each training course amendment available to the Administrator upon request.
- (d) Training courses. A pilot school may request approval for the training courses specified under § 141.11(b).

(e) Additional rules for internet based training courses. An application for an initial or amended training course offered through an internet based medium must comply with the following:

- (1) Amendments to internet-based training courses must be identified and documented through an associated syllabus. Such documentation must include a revision number, date, and description of the change. Minor editorial or typographical changes to the associated syllabus that do not affect course objectives, structure, or regulatory compliance do not require prior FAA approval, provided the certificate holder notifies the FAA within 30 days of implementation. Minor editorial, clarifying, or instructional enhancements made within the internet-based course content that do not affect course objectives, structure, or regulatory compliance do not require FAA approval or notification, provided such changes remain consistent within the FAA-accepted syllabus. The certificate holder must ensure that all substantive changes to course content, structure, or delivery that affect regulatory compliance are reflected in the associated syllabus and submitted for FAA review as required.
- (2) For monitoring purposes, the school must provide the FAA an acceptable means to log-in and log-off from a remote location to review all elements of the course as viewed by attendees and to by-pass the normal attendee restrictions.
- (3) The school must incorporate adequate security measures into its internet-based courseware information system and into its operating and maintenance procedures to ensure the following fundamental areas of security and protection:
 - (i) Integrity.
 - (ii) Identification/Authentication.
 - (iii) Confidentiality.
 - (iv) Availability.
 - (v) Access control.

§ 141.55 Training course: Contents.

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each training course for which approval is requested must meet the minimum curriculum requirements in accordance with the appropriate appendix of this part.

- (b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety and except as provided in paragraphs (d) and (e) of this section, each training course for which approval is requested must meet the minimum ground and flight training time requirements in accordance with the appropriate appendix of this part.
- (c) Each training course for which approval is requested must contain:
 - (1) The minimum qualifications and ratings for each instructor assigned to ground or flight training; and
 - (2) A training syllabus that includes the following information—
 - (i) The prerequisites for enrolling in the ground and flight portion of the course that include the pilot certificate and rating (if required by this part), training, pilot experience, and pilot knowledge;
 - (ii) A detailed description of each lesson, including the lesson's objectives, standards, and planned time for completion;
 - (iii) A description of what the course is expected to accomplish with regard to student learning;
 - (iv) The expected accomplishments and the standards for each stage of training; and
 - (v) A description of the checks and tests to be used to measure a student's accomplishments for each stage of training.
 - (vi) Planned ground and flight training time requirements for the course.
- (d) A pilot school may request and receive initial approval for any training course under this part that does not meet the minimum ground and flight training time requirements, provided the following provisions are met:
 - (1) The school meets and maintains the Quality Management System requirements of § 141.83(b)(2), as demonstrated by documented evidence that the system is implemented, monitored, reviewed, and effective in practice; and
 - (2) The practical test or knowledge test for the course is to be given by—
 - (i) An FAA inspector;
 - (ii) An examiner who is not an employee of the school, or
 - (iii) An individual authorized to conduct such tests under an Organization Designation Authorization (ODA), acting within the scope of that authorization.
 - (3) End-of-Course Practical Test. When the practical test required for certification is conducted in accordance with paragraph (d)(2) of

this section as part of the school's end-of-course evaluation, the test shall constitute the required practical test for the issuance of the certificate or rating. In such cases—

- (i) The graduation certificate may be issued upon satisfactory completion of that practical test; and
 - (ii) No additional practical test shall be required following graduation for that course.
- (e) A pilot school may request and receive the privilege of examining authority for any training course under this part that does not meet the minimum ground and flight training time requirements, provided the following conditions are met:
 - (1) The school has held initial approval for that training course for at least 24 calendar months.
 - (2) The pilot school has trained at least 30 students in that training course and recommended those students for a pilot, flight instructor, or ground instructor certificate or rating; and
 - (i) The practical or knowledge test, as appropriate, was given by:
 - (A) An FAA inspector; or
 - (B) An examiner who is not an employee of the school.
 - (C) An individual authorized to conduct such tests under an Organization Designation Authorization (ODA), acting within the scope of that authorization.
 - (3) The pilot school has provided the Administrator with clear evidence, based on analysis through its approved quality system, showing that students in the reduced-time course consistently achieve all required learning outcomes. This evidence must demonstrate:
 - (i) students meet the required knowledge, skill, and proficiency standards on stage checks, end-of-course evaluations;
 - (ii) graduates are fully prepared for FAA knowledge and practical tests; and
 - (iii) an analysis of training performance trends, including identification and corrective action for any deficiencies affecting student proficiency, quality, or safety; and
 - (4) The pilot school meets and maintains the Quality Management System requirements of § 141.83(b)(2), as demonstrated by documented evidence that the system is implemented, monitored, reviewed, and effective in practice.

§ 141.57 Special curricula.

A pilot school may apply for approval to conduct a special course of airman training if the applicant shows that the training course contains features that could achieve a level of pilot proficiency equivalent to that achieved by a training course prescribed in the other appendixes of this part or the requirements of part 61 of this chapter.

Subpart D—Examining Authority**§ 141.61 Applicability.**

Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, this subpart prescribes the requirements for the issuance of examining authority to the holder of a pilot school certificate, and the privileges and limitations of that examining authority.

§ 141.63 Examining authority privilege requirements.

(a) A pilot school shall meet the following prerequisites to receive initial approval for examining authority:

- (1) The school shall hold a pilot school certificate and rating issued under this part;
- (2) The school shall have held the rating in which examining authority is sought for at least 1 year;
- (3) The pilot school shall have trained and graduated at least 10 students in the training course for which examining authority is sought; and
- (4) The pilot school meets the Quality Management System requirements of § 141.83(b)(2), as demonstrated by documented evidence that the system is implemented, monitored, reviewed, and effective in practice;
- (5) The pilot school shall hold an approved syllabus for check instructor training required in §141.37;
- (6) The pilot school shall develop and maintain policies and procedures within its Pilot Training Management Manual (PTMM) that describe the pilot school's examining authority processes and procedures, as required by § 141.52(b)(3) of this part;
- (7) The pilot school shall have an Airmen Certification Representative (ACR-141) employed at the pilot school or one that is available to them;
- (8) The pilot school shall complete the application for examining authority;
- (9) The pilot school shall demonstrate, through evaluation of the chief instructor, that the chief instructor ensures the pilot school's examining authority is exercised correctly and consistently by

authorized personnel, and that such oversight reflects appropriate ethics, responsibility, and accountability, and is consistent with—

- (i) The pilot school's examining authority policies and procedures required by paragraph (d) of this section;
 - (ii) The pilot school's approved check instructor training syllabus; and
 - (iii) The applicable airman certification standards acceptable to the Administrator.
- (10) An appropriate number of end-of-course tests, conducted by the chief instructor, assistant chief instructor, and/or check instructor, are observed in person or by electronic means, determining the pilot school's examining authority process meets the expectations of the Administrator. The focus of the observation is the pilot school and evaluator's ability to conduct an evaluation appropriate to the Administrator. The performance of the applicant is not a determining factor.
- (b) A pilot school must meet the following requirements to retain approval of its examining authority:
- (1) The pilot school must continuously meet the Quality Management System requirements of § 141.83(b)(2), as demonstrated by documented evidence that the system is implemented, monitored, reviewed, and effective in practice;
 - (2) The school must hold a pilot school certificate and rating issued under this part;
 - (3) The chief instructor or designee has attended annual training provided by the FAA or other means acceptable to the Administrator, on areas associated with examining authority procedures and expectations;
 - (4) The pilot school must maintain an approved syllabus for check instructor training required by § 141.37(b) and ensure that the syllabus remains current and implemented;
 - (5) The pilot school must maintain and comply with an approved policies and procedures manual that describes the pilot school's examining authority processes, as required by paragraph (d) of this section; and
 - (6) The pilot school must have continuous access to an Airman Certification Representative (ACR-141), either through employment by the pilot school or through an arrangement that ensures timely availability to support examining authority activities.

- (c) Failure to meet the requirements of paragraph (b) of this section constitutes grounds for suspension or revocation of the pilot school's examining authority privileges.
- (d) Each pilot school authorized to exercise examining authority shall develop, maintain, and comply with examining authority policies and procedures contained within its Pilot Training Management Manual (PTMM), as required by § 141.52(b)(3). The examining authority section of the Pilot Training Management Manual (PTMM) shall describe the requirements, guidance, and processes governing the pilot school's examining authority and shall include guidance on the following areas:
 - (1) Applicant eligibility and examining procedures;
 - (2) Expectations for check instructor plans of action, including requirements for periodic review, revision, and adjustment, as appropriate;
 - (3) Check instructor qualification requirements;
 - (4) Check instructor roles, responsibilities, expectations, and limitations;
 - (5) Oversight and quality control processes, including requirements for observation of check instructors conducting end-of-course tests;
 - (6) Recordkeeping and documentation requirements; and
 - (7) End-of-course test procedures, including applicable calendar-time limitations for completion of the end-of-course test.
- (e) To obtain approval to exercise examining authority for an additional training syllabus listed in § 141.11, a pilot school shall meet the following requirements:
 - (1) The pilot school shall have already been approved for examining authority under this part;
 - (2) The pilot school shall hold a valid pilot school certificate and rating issued under this part;
 - (3) The pilot school shall have held the rating for which examining authority is sought for at least 1 year;
 - (4) The number of students required to have been trained and graduated from the course may, at the discretion of the Administrator, be reduced from the requirements specified in paragraph (a) of this section, based on the pilot school's demonstrated prior performance while exercising examining authority;
 - (5) The pilot school must demonstrate that it has continuously met the Quality Management System requirements of § 141.83(b)(2), as

- evidenced by documented records showing that the system is implemented, monitored, reviewed, and effective in practice;
- (6) The check instructor is evaluated on the pilot school's examining authority process and procedures associated with the additional training syllabus to include the following areas;
- (i) The pilot school's examining authority policies and procedures;
 - (ii) The pilot school's approved check instructor training syllabus;
 - (iii) Adherence to airman certification standards appropriate to the Administrator.
- (7) Through observation of end-of-course tests conducted by the chief instructor, assistant chief instructor, and/or check instructor, either in person or through electronic means, the pilot school shall demonstrate that its examining authority processes and procedures for the additional course are exercised in a manner acceptable to the Administrator.
- (i) The number of end-of-course tests required to be observed may, at the discretion of the Administrator, be reduced from the number required for initial examining authority approval under paragraph (a) of this section, based on the pilot school's demonstrated prior performance while exercising examining authority; and
 - (ii) The focus of the observation must be the pilot school's examining authority processes and the evaluator's conduct of the evaluation. The performance of the applicant during the test is not a determining factor for compliance with this requirement.
- (f) Course modifications impact on examining authority. The approval of revisions, amendments, or modifications to an approved training syllabus or training course outline does not, by itself, result in the suspension, withdrawal, or loss of examining authority, provided the pilot school continues to meet the applicable requirements of this part, including § 141.83(b)(2), and exercises examining authority in a manner acceptable to the Administrator.

§ 141.65 Privileges.

A pilot school that holds examining authority may recommend a person who graduated from its course for the appropriate pilot, flight instructor, or ground

instructor certificate or rating by completing the appropriate end-of-course test in accordance with the provisions of this subpart.

§ 141.67 Operations, limitations and reports.

A pilot school that holds examining authority may only recommend the issuance of a pilot, flight instructor, or ground instructor certificate and rating to a person who completes an end-of-course test, if the recommendation for the issuance of that certificate or rating is in accordance with the following requirements:

- (a) The person graduated from a training course for which the pilot school holds examining authority.
- (b) Except as provided in paragraph (c) of this section, the person satisfactorily completed all the curriculum requirements of that pilot school's approved training course.
- (c) Except as provided in paragraph (d), a person who transfers into a part 141 approved pilot school may receive credit for that previous training and experience, provided the following requirements are met:
 - (1) The maximum credited training time does not exceed one-half of the receiving school's curriculum requirements;
 - (2) The person completes a knowledge and proficiency test conducted by the receiving school for the purpose of determining the amount of pilot experience and knowledge to be credited;
 - (3) The receiving school determines (based on the person's performance on the knowledge and proficiency test required by paragraph (c)(2) of this section) the amount of credit to be awarded, and records that credit in the person's training record; and
 - (4) The receiving school documents the person's training, experience, and the knowledge/proficiency test required by this section.
- (d) A student is not permitted to receive any course credit toward a Professional Pilot Track when transferring mid course.
- (e) End-of-course tests given by a pilot school that holds examining authority must be approved by the Administrator and be at least equal in scope, depth, and difficulty to the comparable knowledge and practical tests prescribed by the Administrator.
- (f) A pilot school that holds examining authority may not use its end-of-course tests if the school:
 - (1) Knows, or has reason to believe, the test has been compromised; or
 - (2) Is notified by the Administrator that there is reason to believe or it is known that the test has been compromised.

(g) A pilot school that holds examining authority must maintain a record of all temporary airman certificates it issues, which consist of the following information:

- (1) A chronological listing that includes—
 - (i) The date the temporary airman certificate was issued;
 - (ii) The student to whom the temporary airman certificate was issued, and that student's permanent mailing address and telephone number;
 - (iii) The training course from which the student graduated;
 - (iv) The name of person who conducted the knowledge or practical test;
 - (v) The type of temporary airman certificate or rating issued to the student; and
 - (vi) The date the student's airman application file was sent to the FAA for processing for a permanent airman certificate.
- (2) A copy of the record containing each student's graduation certificate, superseded airman certificate (if applicable), and knowledge test results; and
- (3) The records required by paragraph (f) of this section must be retained for 1 year and made available to the Administrator upon request. These records must be surrendered to the Administrator when the pilot school ceases to have examining authority.

§ 141.69 Prerequisites, Process, and Procedures for an End-of-Course Test

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, equivalent to the scope of an end-of-course test conducted by a pilot school authorized for examining authority is a test on the areas of operations for an airman certificate, rating, or authorization that is conducted by having the applicant respond to questions and demonstrate maneuvers in flight, or in Flight Simulation Training Device (FSTDs).

- (1) All applicable areas of the Airmen Certification Standards (ACS) shall be met;
- (2) The oral portion shall be conducted before the flight portion;
- (3) The oral and flight portion are not required to be scheduled on the same day. When the oral is complete and the flight portion is planned for another day, the applicant's records shall be updated to reflect satisfactory performance of oral questioning;
 - (i) A letter of discontinuance is not required to be issued;

- (ii) The flight portion is required to be completed within 60 days of completing the oral portion of the end-of-course test.
 - (iii) If the flight portion is not completed within 60 days of completing the oral portion, the applicant shall retake the entire end-of-course test.
- (4) The flight and FSTD time accrued during the end-of-course test is permitted to count towards training course and aeronautical experience requirements.
- (b) Except as provided in paragraphs (c) of this section, to be eligible for an end-of-course test for a certificate or rating issued under this part, an applicant shall;
 - (1) Pass the required knowledge test;
 - (i) Within the 24-calendar month period preceding the month the applicant completes the end-of-course test, if a knowledge test is required, or
 - (ii) Within the 60-calendar-month period preceding the month the applicant completes the end-of-course test for those applicants who complete the airline transport pilot certification training program in §141.11 and pass the knowledge test for an airline transport pilot certificate with a multiengine class rating.
 - (2) Present the knowledge test report at the end-of-course test, if a knowledge test is required;
 - (3) Have satisfactorily accomplished the required training prescribed by this part for the certificate or rating sought, and obtained the appropriate amount of aeronautical experience prescribed by this part so that all aeronautical experience requirements are met at the completion of the end-of-course test;
 - (4) Has received and logged training time within 2 calendar months preceding the month of when the end-of-course test is conducted;
 - (5) For other than sport pilot, holds at least a third class medical certificate, or meets the requirements of § 61.113(i), if a medical certificate is required;
 - (6) For a sport pilot, comply with the requirements of 61.303;
 - (7) Meet the prescribed age requirement of part 61 for the issuance of the certificate or rating sought;
 - (8) Have an endorsement, if required by this part, in the applicant's logbook or training record that has been signed by an authorized instructor who certifies that the applicant;
 - (i) Is prepared for the end-of-course test; and

- (ii) Has demonstrated satisfactory knowledge of the subject areas in which the applicant was deficient on the airman knowledge test;
- (c) A person is not required to comply with the provisions of paragraph (b)(6) of this section if that person is applying for an airline transport pilot certificate or an additional rating to an airline transport certificate in an aircraft that does not require an aircraft type rating end-of-course test;
- (d) The end-of-course test is conducted by the pilot school's chief instructor, assistant chief instructor authorized for the course, or check instructor that has been designated by the chief instructor for the specific end-of-course test;
- (e) At the completion of the end-of-course test, FAA form 8710 is completed and the pilot school will issue a graduation certificate attesting to the applicant has met all requirements of the pilot school's course of training;
 - (1) Pilot schools authorized for examining authority will have an airman certification representative (ACR-141) issue a temporary certificate without further testing to the applicant.

Subpart E—Operating Rules

§ 141.71 Applicability.

Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, this subpart prescribes the operating rules applicable to a pilot school certificated under the provisions of this part.

§ 141.73 Privileges.

- (a) The holder of a pilot school certificate may advertise and conduct approved pilot training courses in accordance with the certificate and any ratings that it holds.
- (b) A pilot school that holds examining authority for an approved training course may recommend a graduate of that course for the issuance of an appropriate pilot, flight instructor, or ground instructor certificate and rating, without taking an FAA practical test, provided the training course has been approved by the Administrator.

§ 141.75 Aircraft requirements.

The following items must be carried on each aircraft used for flight training and solo flights:

- (a) A pretakeoff and prelanding checklist; and
- (b) The operator's handbook for the aircraft, if one is furnished by the manufacturer, or copies of the handbook if furnished to each student using the aircraft.

§ 141.77 Limitations.

- (a) The holder of a pilot school certificate may not issue a graduation certificate to a student, or recommend a student for a pilot certificate or rating, unless the student has:
 - (1) Completed the training specified in the pilot school's course of training; and
 - (2) Passed the required final tests.
- (b) Except as provided in paragraph (c) of this section, the holder of a pilot school may not graduate a student from a course of training unless the student has completed all of the curriculum requirements of that course;
- (c) Except as provided in paragraph (d) of this section, a student may be given credit towards the curriculum requirements of a course for previous training and experience under the following conditions:
 - (1) If the student completed a proficiency test and knowledge test that was conducted by the receiving pilot school and the previous training was based on a part 141- or a part 142-approved flight training course, the credit is limited to not more than 75 percent of the flight training requirements of the curriculum.
 - (2) If the student completed a knowledge test that was conducted by the receiving pilot school and the previous training was based on a part 141- or a part 142-approved aeronautical knowledge training course, the credit is limited to not more than 75 percent of the aeronautical knowledge training requirements of the curriculum.
 - (3) If the student completed a proficiency test and knowledge test that was conducted by the receiving pilot school and the training was received from other than a part 141- or a part 142-approved flight training course, the credit is limited to not more than 25 percent of the flight training requirements of the curriculum.
 - (4) If the student completed a knowledge test that was conducted by the receiving pilot school and the previous training was received from other than a part 141- or a part 142-approved aeronautical knowledge training course, the credit is limited to not more than 25 percent of the aeronautical knowledge training requirements of the curriculum.
 - (5) Completion of previous training must be certified in the student's training record by the training provider or a management official within the training provider's organization, and must contain—
 - (i) The kind and amount of training provided; and
 - (ii) The result of each stage check and end-of-course test, if appropriate.

(d) No transfer credit for the Professional Pilot Track courses will be granted.

§ 141.79 Flight training.

- (a) Except as provided in 141.33(a)(4) of this part, no person other than a certificated flight instructor or commercial pilot with a lighter-than-air rating who has the ratings and the minimum qualifications specified in the approved training course outline may give a student flight training under an approved course of training.
- (b) No student pilot may be authorized to start a solo practice flight from an airport until the flight has been approved by a certificated flight instructor or commercial pilot with a lighter-than-air rating who is present at that airport.
- (c) Each chief instructor and assistant chief instructor assigned to a training course must complete, at least once every 12 calendar months, an approved syllabus of training consisting of ground or flight training, or both, or an approved flight instructor refresher course.
- (d) Each certificated flight instructor, designated instructor to meet the requirements of 141.33(a)(4) of this chapter or commercial pilot with a lighter-than-air rating who is assigned to a flight training course must satisfactorily complete the following tasks, which must be administered by the school's chief instructor, assistant chief instructor, or check instructor:
 - (1) Prior to receiving authorization to train students in a flight training course, must—
 - (i) Accomplish a review of and receive a briefing on the objectives and standards of that training course;
 - (ii) Receive a briefing on historical student performance data and trends for the applicable training course, derived from the pilot school's Quality Management System (QMS), to support effective instruction; and
 - (iii) Accomplish an initial proficiency check in each make and model of aircraft or, if appropriate, Flight Simulation Training Device (FSTD), used in that training course in which that person provides training; and
 - (2) Every 12 calendar months after the month in which the person last complied with the requirements of paragraph (d)(1)(iii) of this section, accomplish:
 - (i) a recurrent proficiency check in one of the aircraft or, if appropriate, Flight Simulation Training Device (FSTD) in which the person trains students, and
 - (ii) Receive a current briefing on historical student performance data and trends for the applicable training course, derived

from the pilot school's Quality Management System (QMS), to support effective instruction.

§ 141.81 Ground training.

- (a) Except as provided in paragraph (b) of this section or 141.33(a)(4) of this chapter, each instructor who is assigned to a ground training course must hold a flight or ground instructor certificate, or a commercial pilot certificate with a lighter-than-air rating, with the appropriate rating for that course of training.
- (b) A person who does not meet the requirements of paragraph (a) of this section may be assigned ground training duties in a ground training course, if:
 - (1) The chief instructor who is assigned to that ground training course finds the person qualified to give that training; and
 - (2) The training is given while under the supervision of the chief instructor or the assistant chief instructor who is present at the facility when the training is given.
- (c) An instructor may not be used in a ground training course until that instructor has been:
 - (1) Briefed on the objectives and standards of that course by the chief instructor, assistant chief instructor, or check instructor, and
 - (2) Briefed on historical student performance data and trends for the applicable training course, derived from the pilot school's Quality Management System (QMS), to support effective instruction.

§ 141.82 Safety Management System (SMS) Requirements

- (a) General. Each certificated pilot school must establish and maintain a Safety Management System (SMS) appropriate to the size, scope, and complexity of its operations.
- (b) Framework. The Safety Management System (SMS) must be consistent with the principles and intent of 14 CFR part 5 and include:
 - (1) Safety policy,
 - (2) Safety risk management,
 - (3) Safety assurance,
 - (4) Safety promotion.
- (c) Integration with training. The pilot school must define, in its Pilot Training Management Manual (PTMM), how Safety Management System (SMS) outputs relevant to training are communicated to the chief instructor and the Quality Management System (QMS) to ensure the SMS recommendations are considered in training oversight, standardization, and the continuous improvement process.

- (d) Roles and responsibilities. The pilot school must define and document roles, responsibilities, and authority related to the Safety Management System (SMS) to ensure effective hazard identification, risk management, safety assurance, and safety promotion. These roles must be appropriate to the size, scope, and complexity of the pilot school's operations and must be described in the Pilot Training Management Manual (PTMM) required by this part.
- (1) SMS Accountable Executive. Designation of an individual who has ultimate responsibility and accountability for the implementation and continued effectiveness of the Safety Management System (SMS). The SMS Accountable Executive must have sufficient authority over resources and personnel to ensure that safety risks are identified, assessed, and managed in accordance with this part.
 - (2) Designation of management personnel. The accountable executive must designate sufficient management personnel who, on behalf of the accountable executive, are responsible for:
 - (i) Coordinate implementation, maintenance, and integration of the SMS throughout the person's organization.
 - (ii) Facilitate hazard identification and safety risk controls.
 - (iii) Monitor the effectiveness of safety risk controls.
 - (iv) Ensure safety promotion throughout the person's organization.
 - (v) Regularly report to the accountable executive on the performance of the SMS and on any need for improvement.
 - (3) Chief instructor participation. The pilot school must define the chief instructor's roles, responsibilities, and decision-making authority with respect to participation in the Safety Management System (SMS), including review of safety-related information relevant to training that is made available through the SMS, and determination of appropriate training-related actions arising from SMS outputs.
 - (4) Combination of roles. The SMS Accountable Executive may also serve as the Accountable Manager for the Quality Management System, provided that the pilot school defines in its Pilot Training Management Manual (PTMM) how the combined roles are exercised to ensure effective implementation and oversight of both systems.
- (e) The holder of a pilot school certificate or a provisional pilot school certificate must, at the time a student is enrolled in an approved training course, furnish that student with a copy of or electronic access to the

safety procedures and practices. Those procedures and practices shall include training on at least the following information—

- (1) The weather minimums required by the school for dual and solo flights;
- (2) The procedures for starting and taxiing aircraft on the ramp;
- (3) Fire precautions and procedures;
- (4) Redispatch procedures after unprogrammed landings, on and off airports;
- (5) Aircraft discrepancies and approval for return-to-service determinations;
- (6) Securing of aircraft when not in use;
- (7) Fuel reserves necessary for local and cross-country flights;
- (8) Avoidance of other aircraft in flight and on the ground;
- (9) Minimum altitude limitations and simulated emergency landing instructions; and
- (10) A description of and instructions regarding the use of assigned practice areas.

§ 141.83 Quality Management System (QMS) Requirements.

- (a) General. Each pilot school must establish, implement, and maintain a Quality Management System (QMS) appropriate to the size, scope, and complexity of its operations. The QMS must be documented and must ensure compliance with this part through systematic monitoring, corrective action, and continuous improvement.
- (b) Required QMS Elements. The QMS must include, at a minimum, the following elements:
 - (1) Quality Policy and Documentation Requirements. Each pilot school must establish and maintain a documented quality framework that includes:
 - (i) Quality Policy. A written quality policy, approved by senior management, stating the school's commitment to compliance with applicable regulatory requirements and to the continuous improvement of its training and operational processes;
 - (ii) Quality Manual. A controlled Quality Manual that describes the structure, responsibilities, policies, and processes of the Quality Management System, including how the requirements of this section are met. The Quality Manual must be kept current, may be maintained as a standalone document or as part of the Pilot Training Management

- Manual (PTMM), and must be made available to the Administrator upon request; and
- (iii) Document and Record Control. Procedures to ensure that required documents and records are approved, current, accessible to personnel, and protected from unauthorized alteration, damage, or loss.
- (2) Roles and Responsibilities. The pilot school must define, and document roles, responsibilities, and authority related to the Quality Management System (QMS) to ensure effective implementation, oversight, and continual improvement. These roles must be appropriate to the size, scope, and complexity of the pilot school's operations and must be described in the quality manual required by this part.
- (i) QMS Accountable Manager. Designation of an Accountable Manager who has the authority and responsibility for the implementation, maintenance, and continued effectiveness of the Quality Management System (QMS). The Accountable Manager must have sufficient authority over resources and personnel to ensure compliance with this part.
 - (ii) Chief instructor. Designation of the chief instructor's roles, responsibilities, and decision-making authority with respect to participation in the Quality Management System. The pilot school must define, in its Quality Manual as required in paragraph (b)(1)(ii) of this part, the scope of the chief instructor's authority to review, evaluate, approve, modify, or reject training-related actions arising from QMS outputs.
 - (iii) Combination of roles. The Accountable Manager and the chief instructor may be the same individual, provided that the pilot school defines in its Quality Manual how the combined roles are exercised to ensure effective implementation and oversight of the Quality Management System.
 - (iv) Internal audit function. The pilot school must ensure that personnel conducting internal audits of the Quality Management System are independent of the activities being audited, to the extent practicable.
 - (v) Management review participation. The pilot school must define, in its Quality Manual as required by this part, the required participants in QMS management reviews. At a minimum, management reviews must include participation

by the Accountable Manager and appropriate training leadership.

- (3) Processes and Monitoring. Identification, documentation, and monitoring of the principal training and support processes necessary to ensure compliance with this part. The school must establish defined performance indicators and monitor process effectiveness at defined intervals to identify adverse trends, nonconformities, and opportunities for improvement;
 - (4) Personnel Competence. Procedures to ensure that personnel performing duties under this part are competent, appropriately trained, and qualified for their assigned responsibilities;
 - (5) Corrective Action and Continuous Improvement. A documented process to identify nonconformities, determine root causes, implement corrective and preventive actions, verify the effectiveness of those actions, and use QMS performance data to drive continuous improvement of training quality and regulatory compliance;
 - (6) Internal Audits. Periodic internal audits of training and support processes to verify conformity with documented procedures, regulatory requirements, and the QMS. Audit results must be documented, communicated to responsible personnel, and used to support corrective action and continuous improvement; and
 - (7) Management Review. An annual, documented management review of the QMS to evaluate its continuing suitability, adequacy, and effectiveness. Management review outputs must include documented decisions and actions related to improvement, corrective actions, and resource needs.
- (c) Quality Management System (QMS) Qualification. The QMS will be qualified using a two-tier system based on the structure and demonstrated effectiveness of the system:
- (1) Tier 1: Structural Compliance. To qualify for tier 1, a school must demonstrate to the Administrator that:
 - (i) All required QMS elements listed in paragraph (b) are documented and planned; and
 - (ii) Required personnel have been assigned and trained;
 - (2) Tier 2: Performance and Effectiveness. To qualify for tier 2, a school must demonstrate to the Administrator that its QMS is functioning effectively in practice. Tier 2, applied for and authorized by the CMO, requires evidence that:

- (i) All required QMS elements listed in paragraph (b) are documented and planned; and
- (ii) Required personnel have been assigned and trained;
- (iii) Documented processes are consistently followed;
- (iv) Internal audits are conducted and audit findings have been addressed;
- (v) Corrective actions are implemented, tracked, verified, and closed;
- (vi) Process monitoring results are used to identify trends and opportunities for improvement;
- (vii) Management reviews assess QMS performance and recommendations are documented; and
- (viii) The school demonstrates the ability to self-identify systemic issues and correct them proactively.

§ 141.85 Chief instructor responsibilities.

(a) A chief instructor designated for a pilot school is responsible for:

- (1) Certifying each student's training record, graduation certificate, stage check and end-of-course test reports, and recommendation for course completion, unless the duties are delegated by the chief instructor to an assistant chief instructor or designee;
- (2) Ensuring that each certificated flight instructor, certificated ground instructor, airline transport pilot certification training program instructor, airline transport pilot enhanced qualification program instructor, or commercial pilot with a lighter-than-air rating passes an initial proficiency check prior to that instructor being assigned instructing duties in the school's approved training course, and thereafter that the instructor passes a recurrent proficiency check every 12 calendar months after the month in which the initial test was accomplished;
- (3) Ensuring that each student accomplishes the required stage checks and end-of-course tests in accordance with the school's approved training course;
- (4) Maintaining training techniques, procedures, and standards for the school that are acceptable to the Administrator;
- (5) Participating in the pilot school's Quality Management System by supporting internal audits, reviewing training-related findings and performance data, and evaluating, approving, modifying, or rejecting proposed actions within the chief instructor's authority arising from QMS outputs; and

- (6) Participating in and supporting the pilot school's Safety Management System (SMS) by reviewing safety-related information relevant to training that is made available through the SMS, and evaluating, approving, modifying, or rejecting proposed safety-related actions within the chief instructor's authority arising from SMS outputs.
- (b) The chief instructor or an assistant chief instructor must be available at the pilot school or, if away from the pilot school, be available by telephone, radio, or other electronic means during the time that training is given for an approved training course.
- (c) The chief instructor may delegate authority for conducting stage checks, end-of-course tests, and flight instructor proficiency checks to the assistant chief instructor or a check instructor.

§ 141.87 Change of chief instructor.

Whenever a pilot school makes a change of designation of its chief instructor, that school:

- (a) Must immediately provide the FAA Central Management Office notification of the change;
- (b) May conduct training without a chief instructor for that training course for a period not to exceed 60 days while awaiting the designation and approval of another chief instructor;
- (c) May, for a period not to exceed 60 days, have the stage checks and end-of-course tests administered by:
 - (1) The training course's assistant chief instructor, if one has been designated;
 - (2) The training course's check instructor, if one has been designated;
 - (3) An FAA inspector;
 - (4) An examiner; or
 - (5) An individual authorized to conduct such tests under an Organization Designation Authorization (ODA), acting within the scope of that authorization.
- (d) If a pilot school does not have a designated chief instructor for more than 60 consecutive days, the pilot school must notify the Administrator and document, within its Quality Management System, the measures taken to ensure continued training oversight, standardization, and evaluation. Based on the pilot school's demonstrated controls, risk profile, and compliance history, the Administrator may permit continued operations, impose operational limitations, or require the pilot school to cease some or all training operations.

(e) A pilot school that has ceased or had its operations limited under paragraph (d) of this section may have its certificate or its operating privileges reinstated, upon:

- (1) Designating and approving another chief instructor;
- (2) Showing it meets the requirements of § 141.83 of this part; and
- (3) Applying for reinstatement in a manner prescribed by the Administrator.

§ 141.89 Maintenance of personnel, facilities, and equipment.

The holder of a pilot school certificate may not provide training to a student who is enrolled in an approved course of training unless:

- (a) Each aircraft and facility necessary for that training meets the standards specified in the holder's Pilot Training Management Manual (PTMM) and the appropriate requirements of this part; and
- (b) Except as provided in § 141.87 of this part, each chief instructor, assistant chief instructor, check instructor, or instructor meets the qualifications specified in the holder's approved course of training and the appropriate requirements of this part.

§ 141.91 Satellite bases.

The holder of a pilot school certificate may conduct ground training or flight training in an approved course of training at a base other than its main operations base if:

- (a) The facilities and personnel used at the satellite base meet the appropriate requirements of subpart B of this part and its approved Pilot Training Management Manual (PTMM);
- (b) The instructors are under the direct supervision of the chief instructor or assistant chief instructor for the appropriate training course, who is readily available for consultation in accordance with § 141.85(b) of this part; and
- (c) The FAA 141 Central Management Office (CMO) is notified if training is conducted at a base other than the school's main operations base for more than 7 consecutive days.

§ 141.93 Enrollment.

- (a) The holder of a pilot school certificate must, at the time a student is enrolled in an approved training course, furnish that student with a copy of or electronic access to of the following:
 - (1) The student's training syllabus;
 - (2) The Pilot Training Management Manual (PTMM); and
 - (3) The students' training course outline.
- (b) The holder of a pilot school certificate must maintain a monthly listing of persons enrolled in each training course offered by the school.

§ 141.95 Graduation certificate.

- (a) The holder of a pilot school certificate must issue a graduation certificate to each student who completes its approved course of training.
- (b) The graduation certificate must be issued to the student upon completion of the course of training and contain at least the following information:
 - (1) The name of the school and the certificate number of the school;
 - (2) The name of the graduate to whom it was issued;
 - (3) The course of training for which it was issued;
 - (4) The date of graduation;
 - (5) A statement that the student has satisfactorily completed each required stage of the approved course of training including the tests for those stages;
 - (6) A certification of the information contained on the graduation certificate by the chief instructor for that course of training; and
 - (7) Certificates issued upon graduating from a course based on internet media must be uniquely identified using an alphanumeric code that is specific to the student graduating from that course.

Subpart F—Records**§ 141.101 Training records.**

- (a) Each holder of a pilot school certificate must establish and maintain a current and accurate record of the participation of each student enrolled in an approved course of training conducted by the school that includes the following information:
 - (1) The date the student was enrolled in the approved course;
 - (2) A chronological log of the student's course attendance, subjects, and flight operations covered in the student's training, and the names and grades of any tests taken by the student; and
 - (3) The date the student graduated, terminated training, or transferred to another school. In the case of graduation from a course based on internet media, the school must maintain the identifying graduation certificate code required by § 141.95(b)(8).
- (b) The records required to be maintained in a student's logbook will not suffice for the record required by paragraph (a) of this section.
- (c) Whenever a student graduates, terminates training, or transfers to another school, the student's record must be certified to that effect by the chief instructor or designee.
- (d) The holder of a pilot school certificate must retain each student record required by this section for at least 1 year from the date that the student:
 - (1) Graduates from the course to which the record pertains;
 - (2) Terminates enrollment in the course to which the record pertains; or

(3) Transfers to another school.

(e) The holder of a pilot school certificate must make a copy of the student's training record available upon request by the student.

Appendix A to Part 141—Sport Pilot Certification Course

1. **Applicability.** This appendix prescribes the minimum curriculum required for a sport pilot certification course under this part, for the following ratings:
 - (a) Airplane single-engine.
 - (b) Rotorcraft gyroplane.
 - (c) Weight-shift-control aircraft.
 - (d) Powered parachute.
 - (e) Glider
 - (f) Lighter-than-air – Balloon
 - (g) Lighter-than-air - Airship
2. **Eligibility for enrollment.** A person must hold a student pilot certificate prior to enrolling in the flight portion of the sport pilot certification course.
3. **Aeronautical knowledge training.** Each approved course must include at least 10 hours of ground training in the aeronautical knowledge areas specified in the applicable Sport Pilot Airman Certification Standards (ACS), appropriate to the aircraft category and class for which the course applies.
4. **Flight training.** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, the following requirements apply:
 - (a) **For an airplane single-engine land or sea course:** 20 hours of flight time in a single-engine airplane. This flight time must include at least 15 hours of flight training from an authorized instructor and at least 5 hours of solo flight training in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:
 - (1) At least 2 hours of cross-country flight training;
 - (2) Ten takeoffs and ten landings to a full stop at an airport, with each landing involving a flight in the traffic pattern;
 - (3) One solo cross-country flight of at least 75 nautical miles total distance, with a full-stop landing at a minimum of two points and with one segment of the flight consisting of a straight-line distance of at least 25 nautical miles between the takeoff and landing locations; and
 - (4) At least 2 hours of flight training with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.

- (b) **For a glider course where the applicant has not logged 20 hours in heavier-than-air aircraft:** 20 hours of flight time in a heavier-than-air aircraft and must have logged at least 10 hours of flight time in a glider. This time must include 10 flights in a glider receiving flight training from an authorized instructor and at least 2 hours of solo flight training in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:
 - (1) Five solo launches and landings; and
 - (2) At least 3 training flights with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.
- (c) **For a glider course where the applicant has logged 20 hours in heavier-than-air aircraft:** 3 hours of flight time in a glider. This time must include 5 flights in a glider receiving flight training from an authorized instructor and at least 1 hour of solo flight training in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:
 - (1) Three solo launches and landings; and
 - (2) At least 3 training flights with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.
- (d) **For a gyroplane course:** 20 hours of flight time in a gyroplane. This time must include at least 15 hours of flight training from an authorized instructor in a gyroplane and at least 5 hours of solo flight training in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:
 - (1) At least 2 hours of cross-country flight training;
 - (2) Ten takeoffs and ten landings to a full stop at an airport, with each landing involving a flight in the traffic pattern;
 - (3) One solo cross-country flight of at least 50 nautical miles total distance, with a full-stop landing at a minimum of two points and with one segment of the flight consisting of a

straight-line distance of at least 25 nautical miles between the takeoff and landing locations; and

- (4) At least 2 hours of flight training with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.
- (e) **For a lighter-than-air, airship course:** 20 hours of flight time in an airship. This time must include at least 15 hours of flight training from an authorized instructor in an airship and at least 3 hours performing the duties of pilot-in-command in an airship with an authorized instructor in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:
- (1) At least 2 hours of cross-country flight training;
 - (2) Three takeoffs and three landings to a full stop (each landing involving a flight in the traffic pattern) at an airport;
 - (3) One cross-country flight of at least 25 nautical miles between the takeoff and landing locations; and
 - (4) At least 2 hours of flight training with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.
- (f) **For a lighter-than-air, balloon course:** 7 hours of flight time in a balloon. This time must include three flights with an authorized instructor and one flight performing the duties of pilot-in-command in a balloon with an authorized instructor in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:
- (1) At least 2 hours of cross-country flight training; and
 - (2) At least 1 hour of flight training with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.
- (g) **For a powered parachute course:** 12 hours of flight time in a powered parachute. This time must include at least 10 hours of flight training from an authorized instructor in a powered parachute and at least 2 hours of solo flight training in the areas of operation

specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:

- (1) At least 1 hour of cross-country flight training;
- (2) Twenty takeoffs and landings to a full stop in a powered parachute, with each landing involving a flight in the traffic pattern at an airport;
- (3) Ten solo takeoffs and landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport;
- (4) One solo flight with a landing at a different airport and with one segment of the flight consisting of a straight-line distance of at least 10 nautical miles between the takeoff and landing locations; and
- (5) At least 1 hour of flight training with an authorized instructor on the areas of operation specified in § 61.311 in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.

(h) **For a weight-shift-control aircraft course:** 20 hours of flight time in a weight-shift-control aircraft. This time must include at least 15 hours of flight training from an authorized instructor in a weight-shift-control aircraft and at least 5 hours of solo flight training in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:

- (1) At least 2 hours of cross-country flight training;
- (2) Ten takeoffs and ten landings to a full stop at an airport, with each landing involving a flight in the traffic pattern;
- (3) One solo cross-country flight of at least 50 nautical miles total distance, with a full-stop landing at a minimum of two points and with one segment of the flight consisting of a straight-line distance of at least 25 nautical miles between the takeoff and landing locations; and
- (4) At least 2 hours of flight training with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.

5. Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for use of Flight Simulation Training Devices (FSTDs):

- (a) The course may include training in a full flight simulator (FFS), flight training device (FTD), Enhanced Advanced Aviation Training Device (EAATD), Advanced Aviation Training Device (AATD), Basic Aviation Training Device (BATD), or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, is representative of the aircraft for which the course is approved, and the training is given by an authorized instructor.
- (b) Training in a Full Flight Simulator (FFS) that meets the requirements of § 141.41(a) may be credited for a maximum of 40 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (c) Training in a Flight Training Device (FTD) Level 6 or Level 7 that meets the requirements of § 141.41(a) may be credited for a maximum of 35 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (d) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 30 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (e) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (f) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (g) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 5 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

- (h) Training in the devices described in paragraphs (b) through (g) of this section, if used in combination, may not exceed 40 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, unless otherwise specifically authorized by the Administrator.

6. ***Stage checks and end-of-course tests.***

- (a) Each student enrolled in a sport pilot course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (c) of section No. 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies.
- (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix B to Part 141—Private Pilot Certification Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for a private pilot certification course required under this part, for the following ratings:
 - (a) Airplane single-engine.
 - (b) Airplane multiengine.
 - (c) Rotorcraft helicopter.
 - (d) Rotorcraft gyroplane.
 - (e) Powered-lift.
 - (f) Glider.
 - (g) Lighter-than-air airship.
 - (h) Lighter-than-air balloon.
2. ***Eligibility for enrollment.*** A person must hold either a sport pilot certificate, sport pilot certificate, or student pilot certificate before enrolling in the solo flight phase of the private pilot certification course.
3. ***Aeronautical knowledge training.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the aircraft category and class rating:
 - (1) 35 hours of training if the course is for an airplane, rotorcraft, or powered-lift category rating.
 - (2) 15 hours of training if the course is for a glider category rating.

- (3) 10 hours of training if the course is for a lighter-than-air category with a balloon class rating.
 - (4) 35 hours of training if the course is for a lighter-than-air category with an airship class rating.
- (b) Ground training must include the aeronautical knowledge areas specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or.
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.;
- 4. ***Flight training.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the following flight training, as provided in this section and section No. 5 of this appendix, on the approved areas of operation listed in paragraph (d) of this section, appropriate to the aircraft category and class rating:
 - (1) 35 hours of training if the course is for an airplane, rotorcraft, powered-lift, or airship rating.
 - (2) 6 hours of training if the course is for a glider rating.
 - (3) 8 hours of training if the course is for a balloon rating.
 - (b) Each approved course must include at least the following flight training:
 - (1) ***For an airplane single-engine course:*** 20 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d) of this section that includes at least—
 - (i) Except as provided in § 61.111 of this chapter , 3 hours of cross-country flight training in a single-engine airplane;
 - (ii) 3 hours of night flight training in a single-engine airplane that includes—
 - (A) One cross-country flight of more than 100-nautical-miles total distance; and
 - (B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and

- (iii) Three hours of flight training in a single-engine airplane on the control and maneuvering of a single-engine airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.
- (2) ***For an airplane multiengine course:*** 20 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d) of this section that includes at least—
 - (i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a multiengine airplane;
 - (ii) 3 hours of night flight training in a multiengine airplane that includes—
 - (A) One cross-country flight of more than 100-nautical-miles total distance; and
 - (B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and
 - (iii) Three hours of flight training in a multiengine airplane on the control and maneuvering of a multiengine airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.
- (3) ***For a rotorcraft helicopter course:*** 20 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d) of this section that includes at least—
 - (i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a helicopter.
 - (ii) 3 hours of night flight training in a helicopter that includes—

- (A) One cross-country flight of more than 50-nautical-miles total distance; and
 - (B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
- (4) **For a rotorcraft gyroplane course:** 20 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d) of this section that includes at least—
 - (i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a gyroplane.
 - (ii) 3 hours of night flight training in a gyroplane that includes—
 - (A) One cross-country flight over 50-nautical-miles total distance; and
 - (B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
- (5) **For a powered-lift course:** 20 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d) of this section that includes at least—
 - (i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a powered-lift;
 - (ii) 3 hours of night flight training in a powered-lift that includes—
 - (A) One cross-country flight of more than 100-nautical-miles total distance; and
 - (B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and
 - (iii) Three hours of flight training in a powered-lift on the control and maneuvering of a powered-lift solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.

- (6) **For a glider course:** 4 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d) of this section that includes at least—
 - (i) Five training flights in a glider with a certificated flight instructor on the launch/tow procedures approved for the course and on the appropriate approved areas of operation listed in paragraph (d)(6) of this section; and
 - (ii) Three training flights in a glider with a certificated flight instructor in preparation for the practical test within 60 days preceding the date of the test.
- (7) **For a lighter-than-air airship course:** 20 hours of flight training from a commercial pilot with an airship rating on the approved areas of operation in paragraph (d) of this section that includes at least—
 - (i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in an airship;
 - (ii) 3 hours of night flight training in an airship that includes—
 - (A) One cross-country flight over 25-nautical-miles total distance; and
 - (B) Five takeoffs and five landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
 - (iii) 3 hours of instrument training in an airship.
- (8) **For a lighter-than-air balloon course:** 8 hours of flight training, including at least five training flights, from a commercial pilot with a balloon rating on the approved areas of operation in paragraph (d) of this section, that includes—
 - (i) If the training is being performed in a gas balloon—
 - (A) Two flights of 1 hour each;
 - (B) One flight involving a controlled ascent to 3,000 feet above the launch site; and
 - (C) Two flights in preparation for the practical test within 60 days preceding the date of the test.
 - (ii) If the training is being performed in a balloon with an airborne heater—
 - (A) Two flights of 30 minutes each;

- (B) One flight involving a controlled ascent to 2,000 feet above the launch site; and
 - (C) Two flights in preparation for the practical test within 60 days preceding the date of the test.
- (c) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for use of Flight Simulation Training Devices (FSTDs):
 - (1) The course may include training in a full flight simulator, flight training device, Enhanced Advanced Aviation Training Device (EAATD), aviation training device, or extended reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, is representative of the aircraft for which the course is approved, and the training is given by an authorized instructor.
 - (2) Training in a full flight simulator (FFS) that meets the requirements of § 141.41(a) may be credited for a maximum of 65 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (3) Training in a flight training device (FTD) Level 6 or Level 7 that meets the requirements of § 141.41(a) may be credited for a maximum of 60 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for

those tasks and credit specifically authorized by the Administrator.

- (7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (8) Training in Flight Simulation Training Devices (FSTDs) described in paragraphs (c)(2) through (7) of this section, if used in combination, may be credited for a maximum of 65 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (d) Each approved course must include the flight training on the approved areas of operation—
 - (1) Specified in the Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) Specified in a consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
- 5. **Solo flight training.** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the following solo flight training:
 - (a) **For an airplane single-engine course:** 5 hours of solo flight training in a single-engine airplane on the approved areas of operation in paragraph (d) of section No. 4 of this appendix that includes at least—
 - (1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations; and
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
 - (b) **For an airplane multiengine course:** 5 hours of flight training in a multiengine airplane performing the duties of a pilot-in-command

while under the supervision of a certificated flight instructor. The training must consist of the approved areas of operation in paragraph (d) of section No. 4 of this appendix, and include at least—

- (1) One 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations; and
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (c) ***For a rotorcraft helicopter course:*** 5 hours of solo flight training in a helicopter on the approved areas of operation in paragraph (d) of section No. 4 of this appendix that includes at least—
- (1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 25 nautical miles between the takeoff and landing locations; and
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (d) ***For a rotorcraft gyroplane course:*** 5 hours of solo flight training in gyroplanes on the approved areas of operation in paragraph (d) of section No. 4 of this appendix that includes at least—
- (1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 25 nautical miles between the takeoff and landing locations; and
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (e) ***For a powered-lift course:*** 5 hours of solo flight training in a powered-lift on the approved areas of operation in paragraph (d) of section No. 4 of this appendix that includes at least—
- (1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations; and

- (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
 - (f) **For a glider course:** Two solo flights in a glider on the approved areas of operation in paragraph (d) of section No. 4 of this appendix, and the launch and tow procedures appropriate for the approved course.
 - (g) **For a lighter-than-air airship course:** 5 hours of flight training in an airship performing the duties of pilot-in-command while under the supervision of a commercial pilot with an airship rating. The training must consist of the approved areas of operation in paragraph (d) of section No. 4 of this appendix.
 - (h) **For a lighter-than-air balloon course:** Two solo flights in a balloon with an airborne heater if the course involves a balloon with an airborne heater or, if the course involves a gas balloon, at least two flights in a gas balloon performing the duties of pilot-in-command while under the supervision of a commercial pilot with a balloon rating. The training must consist of the approved areas of operation in paragraph (d) of section No. 4 of this appendix, in the kind of balloon for which the course applies.
6. **Stage checks and end-of-course tests.**
- (a) Each student enrolled in a private pilot course must satisfactorily accomplish the stage checks and end-of-course tests in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (d) of section No. 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies.
 - (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix C to Part 141—Instrument Rating Course

1. **Applicability.** This appendix prescribes the minimum curriculum for an instrument rating course and an additional instrument rating course, required under this part, for the following ratings:
 - (a) Instrument—airplane.
 - (b) Instrument—helicopter.
 - (c) Instrument—powered-lift.
2. **Eligibility for enrollment.** A person must hold at least a private pilot certificate with an aircraft category and class rating appropriate to the instrument rating for which the course applies prior to enrolling in the flight portion of the instrument rating course.
3. **Aeronautical knowledge training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the following ground training on the aeronautical knowledge areas referenced in paragraph (b) of this section appropriate to the instrument rating for which the course applies:
 - (1) 30 hours of training if the course is for an initial instrument rating.
 - (2) 20 hours of training if the course is for an additional instrument rating.
 - (b) Ground training must include the aeronautical knowledge areas:
 - (1) Specified in the Airman Certification Standards (ACS) appropriate to the instrument rating for which the course applies; or
 - (2) Specified in a consensus standard that has been accepted by the Administrator, appropriate to the instrument rating for which the course applies.
4. **Flight training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the following flight training on the approved areas of operation referenced in paragraph (d) of this section, appropriate to the instrument-aircraft category and class rating for which the course applies:
 - (1) 35 hours of instrument training if the course is for an initial instrument rating.
 - (2) 15 hours of instrument training if the course is for an additional instrument rating.

(b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for the use of Flight Simulation Training Devices (FSTDs)-

- (1) The course may include training in a full flight simulator, flight training device, aviation training device, Enhanced Advanced Aviation Training Device (EAATD), or extended reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, is representative of the aircraft for which the course is approved, and the training is given by an authorized instructor.
- (2) Credit for training in a full flight simulator that meets the requirements of § 141.41(a) cannot exceed 80 percent of the total flight training hour requirements of the course or of this section, whichever is less.
- (3) Credit for training in a flight training device Level 6 or Level 7 that meets the requirements of § 141.41(a), cannot exceed 70 percent of the total flight training hour requirements of the course or of this section, whichever is less.
- (4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 60 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 40 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or

validated in accordance with § 141.41(c) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(8) Credit for training in Flight Simulation Training Devices (FSTDs) described in paragraphs (b)(2) through (7) of this section, if used in combination, cannot exceed 80 percent of the total flight training hour requirements of the course or of this section, whichever is less.

(c) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each approved course must include the following flight training—

(1) ***For an instrument airplane course:*** Instrument training time from a certificated flight instructor with an instrument rating on the approved areas of operation referenced in paragraph (d) of this section including at least one cross-country flight that—

- (i) Is in the category and class of airplane that the course is approved for, and is performed under IFR;
- (ii) Is a distance of at least 250 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports;
- (iii) Involves an instrument approach at each airport; and
- (iv) Involves three different kinds of approaches with the use of navigation systems.

(2) ***For an instrument helicopter course:*** Instrument training time from a certificated flight instructor with an instrument rating on the approved areas of operation referenced in paragraph (d) of this section including at least one cross-country flight that—

- (i) Is in a helicopter and is performed under IFR;
- (ii) Is a distance of at least 100 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 50 nautical miles between airports;
- (iii) Involves an instrument approach at each airport; and
- (iv) Involves three different kinds of approaches with the use of navigation systems.

- (3) ***For an instrument powered-lift course:*** Instrument training time from a certificated flight instructor with an instrument rating on the approved areas of operation referenced in paragraph (d) of this section including at least one cross-country flight that—
 - (i) Is in a powered-lift and is performed under IFR;
 - (ii) Is a distance of at least 250 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports;
 - (iii) Involves an instrument approach at each airport; and
 - (iv) Involves three different kinds of approaches with the use of navigation systems.
- (d) Each course must include flight training on the areas of operation referenced under this paragraph appropriate to the instrument aircraft category and class rating (if a class rating is appropriate) for which the course applies:
 - (1) Areas of operation specified in the Airman Certification Standards (ACS) appropriate to the instrument rating for which the course applies; or
 - (2) Areas of operation specified in a consensus standard that has been accepted by the Administrator, appropriate to the instrument rating for which the course applies.
- 5. ***Stage checks and end-of-course tests.*** Each student enrolled in an instrument rating course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (d) of section No. 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies.

Appendix D to Part 141—Commercial Pilot Certification Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for a commercial pilot certification course required under this part, for the following ratings:
 - (a) Airplane single-engine.
 - (b) Airplane multiengine.
 - (c) Rotorcraft helicopter.
 - (d) Rotorcraft gyroplane.
 - (e) Powered-lift.
 - (f) Glider.
 - (g) Lighter-than-air airship.
 - (h) Lighter-than-air balloon.
2. ***Eligibility for enrollment.*** A person must hold the following prior to enrolling in the flight portion of the commercial pilot certification course:
 - (a) At least a private pilot certificate; and
 - (b) If the course is for a rating in an airplane or a powered-lift category, then the person must:
 - (1) Hold an instrument rating in the aircraft that is appropriate to the aircraft category rating for which the course applies; or
 - (2) Be concurrently enrolled in an instrument rating course that is appropriate to the aircraft category rating for which the course applies, and pass the required instrument rating practical test prior to completing the commercial pilot certification course.
3. ***Aeronautical knowledge training.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the following ground training on the aeronautical knowledge areas referenced in paragraph (b) of this section, appropriate to the aircraft category and class rating for which the course applies:
 - (1) 35 hours of training if the course is for an airplane category rating or a powered-lift category rating.
 - (2) 65 hours of training if the course is for a lighter-than-air category with an airship class rating.
 - (3) 30 hours of training if the course is for a rotorcraft category rating.
 - (4) 20 hours of training if the course is for a glider category rating.

- (5) 20 hours of training if the course is for the lighter-than-air category with a balloon class rating.
 - (b) Ground training must include the aeronautical knowledge areas:
 - (1) Specified in the Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or.
 - (2) Specified in a consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
4. **Flight training.**
- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the following flight training, as provided in this section and section No. 5 of this appendix, on the approved areas of operation referenced in paragraph (d) of this section that are appropriate to the aircraft category and class rating for which the course applies:
 - (1) 120 hours of training if the course is for an airplane or powered-lift rating.
 - (2) 155 hours of training if the course is for an airship rating.
 - (3) 115 hours of training if the course is for a rotorcraft rating.
 - (4) 6 hours of training if the course is for a glider rating.
 - (5) 10 hours of training and 8 training flights if the course is for a balloon rating.
 - (b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the following flight training:
 - (1) **For an airplane single-engine course:** 55 hours of flight training from a certificated flight instructor on the approved areas of operation listed in paragraph (d) of this section that includes at least—
 - (i) Ten hours of instrument training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must include attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. A portion of this training may be completed in a Flight Simulation Training Device (FSTD) that meets the

requirements of § 141.41 of this part. Five hours of the 10 hours required on instrument training must be in a single-engine airplane;

- (ii) Ten hours of training in a complex airplane, a turbine-powered airplane, or a technically advanced airplane that meets the requirements of § 61.129(j) of this chapter, or any combination thereof. The airplane must be appropriate to land or sea for the rating sought;
- (iii) One 2-hour cross country flight in daytime conditions in a single-engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; and
- (iv) One 2-hour cross country flight in nighttime conditions in a single-engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure.

(2) ***For an airplane multiengine course:*** 55 hours of flight training from a certificated flight instructor on the approved areas of operation listed in paragraph (d) of this section that includes at least—

- (i) Ten hours of instrument training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must include attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. A portion of this training may be completed in a Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part. Five hours of the 10 hours required on instrument training must be in a multiengine airplane;
- (ii) 10 hours of training in a multiengine complex or turbine-powered airplane, or any combination thereof;
- (iii) One 2-hour cross country flight in daytime conditions in a multiengine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; and
- (iv) One 2-hour cross country flight in nighttime conditions in a multiengine airplane that consists of a total

straight-line distance of more than 100 nautical miles from the original point of departure.

(3) **For a rotorcraft helicopter course:** 30 hours of flight training from a certificated flight instructor on the approved areas of operation listed in paragraph (d) of this section that includes at least—

- (i) Five hours on the control and maneuvering of a helicopter solely by reference to instruments in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must include attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, full flight simulator, flight training device, or an advanced aviation training device that meets the requirements of § 141.41 of this part.;
- (ii) One 2-hour cross country flight in daytime conditions in a helicopter that consists of a total straight-line distance of more than 50 nautical miles from the original point of departure; and
- (iii) One 2-hour cross country flight in nighttime conditions in a helicopter that consists of a total straight-line distance of more than 50 nautical miles from the original point of departure.

(4) **For a rotorcraft gyroplane course:** 30 hours of flight training from a certificated flight instructor on the approved areas of operation listed in paragraph (d) of this section that includes at least—

- (i) 2.5 hours on the control and maneuvering of a gyroplane solely by reference to instruments in instrument meteorological conditions or including using a view-limiting device, or any combination thereof. Training must include attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, full flight simulator, flight training device, or an advanced aviation training

device that meets the requirements of § 141.41 of this part.;

- (ii) One 2-hour cross country flight in daytime conditions in a gyroplane that consists of a total straight-line distance of more than 50 nautical miles from the original point of departure; and
 - (iii) Two hours of flight training in nighttime conditions in a gyroplane at an airport, that includes 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern).
- (5) **For a powered-lift course:** 55 hours of flight training from a certificated flight instructor on the approved areas of operation listed in paragraph (d) of this section that includes at least—
- (i) Ten hours of instrument training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must include attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. A portion of this training may be completed in a Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part. Five hours of the 10 hours required on instrument training must be in a powered-lift;
 - (ii) One 2-hour cross country flight in daytime conditions in a powered-lift that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; and
 - (iii) One 2-hour cross country flight in nighttime conditions in a powered-lift that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure.
- (6) **For a glider course:** 4 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d) of this section, that includes at least—
- (i) Five training flights in a glider with a certificated flight instructor on the launch/tow procedures approved for

- the course and on the appropriate approved areas of operation listed in paragraph (d) of this section; and
- (ii) Three training flights in a glider with a certificated flight instructor in preparation for the practical test within 60 days preceding the date of the test.
- (7) **For a lighter-than-air airship course:** 55 hours of flight training in airships from a commercial pilot with an airship rating on the approved areas of operation in paragraph (d) of this section that includes at least—
- (i) Three hours of instrument training in an airship, in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must include attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
 - (ii) One hour cross country flight in daytime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure; and
 - (iii) One hour cross country flight in nighttime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure.
- (8) **For a lighter-than-air balloon course:** Flight training from a commercial pilot with a balloon rating on the approved areas of operation in paragraph (d) of this section that includes at least—
- (i) If the course involves training in a gas balloon:
 - (A) Two flights of 1 hour each;
 - (B) One flight involving a controlled ascent to at least 5,000 feet above the launch site; and
 - (C) Two flights in preparation for the practical test within 60 days preceding the date of the test.
 - (ii) If the course involves training in a balloon with an airborne heater:
 - (A) Two flights of 30 minutes each;
 - (B) One flight involving a controlled ascent to at least 3,000 feet above the launch site; and
 - (C) Two flights in preparation for the practical test within 60 days preceding the date of the test.

(c) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for the use of Flight Simulation Training Devices (FSTDs):

- (1) The course may include training in a full flight simulator or flight training device, aviation training device, Enhanced Advanced Aviation Training Device (EAATD) or extended reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and is given by an authorized instructor.
- (2) Training in a full flight simulator that meets the requirements of § 141.41(a) may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (3) Training in a flight training device Level 6 or Level 7 that meets the requirements of § 141.41(a) may be credited for a maximum of 45 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 40 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 30 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality

(AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.(8) Training in the flight training devices described in paragraphs (c)(2) and (7) of this section, if used in combination, may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(d) Each approved course must include the flight training on the approved areas of operation—

(1) Specified in the Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or

(2) Specified in a consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

5. **Solo training.** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the following solo flight training:

(a) **For an airplane single-engine course.** Ten hours of solo flight time in a single-engine airplane, or 10 hours of flight time while performing the duties of pilot-in-command in a single-engine airplane with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under paragraph (d) of section 4 of this appendix, and include—

(1) One cross-country flight of not less than 300 nautical miles total distance, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii, the longest segment need only have a straight-line distance of at least 150 nautical miles;

(2) 5 hours in night VFR conditions with 2 takeoffs and 2 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower; and

- (3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.
- (b) ***For an airplane multiengine course.*** Ten hours of solo flight time in a multiengine airplane, or 10 hours of flight time while performing the duties of pilot-in-command in a multiengine airplane with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under paragraph (d) of section 4 of this appendix, and include—
 - (1) One cross-country flight of not less than 300 nautical miles total distance, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii, the longest segment need only have a straight-line distance of at least 150 nautical miles;
 - (2) 5 hours in night VFR conditions with 2 takeoffs and 2 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower; and
 - (3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.
- (c) ***For a rotorcraft helicopter course.*** Ten hours of solo flight time in a helicopter, or 10 hours of flight time while performing the duties of pilot-in-command in a helicopter with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under paragraph (d) of section 4 of this appendix, and include—
 - (1) One cross-country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles from the original point of departure;
 - (2) 5 hours in night VFR conditions with 2 takeoffs and 2 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower; and
 - (3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.
- (d) ***For a rotorcraft-gyroplane course.*** Ten hours of solo flight time in a gyroplane, or 10 hours of flight time while performing the duties of pilot-in-command in a gyroplane with an authorized instructor on board, or any combination thereof. The training must consist of the

approved areas of operation under paragraph (d) of section 4 of this appendix, and include—

- (1) One cross-country flight with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles from the original point of departure;
- (2) 5 hours in night VFR conditions with 2 takeoffs and 2 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower; and
- (3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.

(e) **For a powered-lift course.** Ten hours of solo flight time in a powered-lift, or 10 hours of flight time while performing the duties of pilot-in-command in a powered-lift with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under paragraph (d) of section No. 4 of this appendix, and include—

- (1) One cross-country flight, if the training is being performed in the State of Hawaii, with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 150 nautical miles;
- (2) One cross-country flight, if the training is being performed in a State other than Hawaii, with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 250 nautical miles;
- (3) 5 hours in night VFR conditions with 2 takeoffs and 2 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower; and
- (4) 10 total takeoffs and 10 total landings at an airport with an operating control tower.

(f) **For a glider course:** 5 solo flights in a glider on the approved areas of operation in paragraph (d) of section No. 4 of this appendix.

(g) **For a lighter-than-air airship course:** 10 hours of flight training in an airship performing the duties of pilot-in-command while under the supervision of a commercial pilot with an airship rating, or any combination thereof. The training must consist of the approved areas of operation in paragraph (d) of section No. 4 of this appendix and include at least—

- (1) One cross-country flight with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 25 nautical miles from the original point of departure; and
 - (2) 5 hours in night VFR conditions with 2 takeoffs and 2 landings (with each landing involving a flight with a traffic pattern); and
 - (3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.
- (h) ***For a lighter-than-air balloon course:*** Two solo flights if the course is for a hot air balloon rating, or, if the course is for a gas balloon rating, at least two flights in a gas balloon, while performing the duties of pilot-in-command under the supervision of a commercial pilot with a balloon rating, or any combination thereof. The training shall consist of the approved areas of operation in paragraph (d) of section No. 4 of this appendix, in the kind of balloon for which the course applies.
6. ***Stage checks and end-of-course tests.***
- (a) Each student enrolled in a commercial pilot course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (d) of section No. 4 of this appendix that are appropriate to aircraft category and class rating for which the course applies.
 - (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix E to Part 141—Airline Transport Pilot Certification Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for an airline transport pilot certification course under this part, for the following ratings:
 - (a) Airplane single-engine.
 - (b) Airplane multiengine.
 - (c) Rotorcraft helicopter.
 - (d) Powered-lift.
2. ***Eligibility for enrollment.*** Before completing the flight portion of the airline transport pilot certification course, a person must meet the aeronautical experience requirements for an airline transport pilot certificate under part 61, subpart G of this chapter that is appropriate to the aircraft category and class rating for which the course applies, and:
 - (a) Hold a commercial pilot certificate and an instrument rating, or an airline transport pilot certificate with instrument privileges;
 - (b) Meet the military experience requirements under § 61.73 of this chapter to qualify for a commercial pilot certificate and an instrument rating, if the person is a rated military pilot or former rated military pilot of an Armed Force of the United States; or
 - (c) Hold either a foreign airline transport pilot license or foreign commercial pilot license and an instrument rating, if the person holds a pilot license issued by a contracting State to the Convention on International Civil Aviation.
3. ***Aeronautical knowledge areas.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 40 hours of ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the aircraft category and class rating for which the course applies.
 - (b) Ground training must include the aeronautical knowledge areas specified in:
 - (1) the Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or;
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
4. ***Flight training.***

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 25 hours of flight training on the approved areas of operation listed in paragraph (c) of this section appropriate to the aircraft category and class rating for which the course applies. At least 15 hours of this flight training must be instrument flight training.
- (b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for the use of flight simulator training devices—
 - (1) The course may include training in a full flight simulator, flight training device, aviation training device, Enhanced Advanced Aviation Training Device (EAATD), or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.
 - (2) Training in a full flight simulator that meets the requirements of § 141.41(a) may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (3) Training in a flight training device level r or level 7 that meets the requirements of § 141.41(a) may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 45 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

- (6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (8) Training in flight simulator training devices described in paragraphs (b)(2) and (7) of this section, if used in combination, may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (c) Each approved course must include flight training on the approved areas of operation I specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

5. *Stage checks and end-of-course tests.*

- (a) Each student enrolled in an airline transport pilot course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (c) of section No. 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies.

Appendix F to Part 141—Flight Instructor Certification Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for a flight instructor certification course required under this part, for the following ratings:
 - (a) Airplane single-engine.
 - (b) Airplane multiengine.
 - (c) Rotorcraft helicopter.
 - (d) Rotorcraft gyroplane.
 - (e) Powered-lift.
 - (f) Glider category.
2. ***Eligibility for enrollment.*** A person must hold the following prior to enrolling in the flight portion of the flight instructor course:
 - (a) A commercial pilot certificate or an airline transport pilot certificate, with an aircraft category and class rating appropriate to the flight instructor rating for which the course applies; and
 - (b) An instrument rating or privilege in an aircraft that is appropriate to the aircraft category and class rating for which the course applies, if the course is for a flight instructor airplane or powered-lift instrument rating.
3. ***Aeronautical knowledge training.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the 40 hours of ground training in the aeronautical knowledge areas listed in paragraph (b) of this section.
 - (b) Ground training must include the aeronautical knowledge areas specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
 - (c) A student who satisfactorily completes 2 years of study on the principles of education at a college or university may be credited with no more than 20 hours of the training required in paragraph (a)(1) of this section.
4. ***Flight training.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety,

each approved course must include at least the following flight training on the approved areas of operation of paragraph (c) of this section appropriate to the flight instructor rating for which the course applies:

- (1) 25 hours, if the course is for an airplane, rotorcraft, or powered-lift rating; and
 - (2) 10 hours, which must include 10 flights, if the course is for a glider category rating.
- (b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for the use of flight simulator training devices:
- (1) The course may include training in a full flight simulator, flight training device, Enhanced Advanced Aviation Training Device (EAATD), aviation training device, or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, and provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.
 - (2) Training in a full flight simulator that meets the requirements of § 141.41(a), may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (3) Training in a flight training device level 6 or level 7 that meets the requirements of § 141.41(a), may be credited for a maximum of 60 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 35 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

- (6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (8) Training in full flight simulators or flight training devices described in paragraphs (b)(2) and (7) of this section, if used in combination, may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (c) Each approved course must include flight training on the approved areas of operation specified in-
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

5. *Stage checks and end-of-course tests.*

- (a) Each student enrolled in a flight instructor course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the appropriate approved areas of operation listed in paragraph (c) of section No. 4 of this appendix appropriate to the flight instructor rating for which the course applies.
- (b) In the case of a student who is enrolled in a flight instructor-airplane rating or flight instructor-glider rating course, that student must have:
 - (1) Received a logbook endorsement from a certificated flight instructor certifying the student received ground and flight

- training on stall awareness, spin entry, spins, and spin recovery procedures in an aircraft that is certificated for spins and is appropriate to the rating sought; and
- (2) Demonstrated instructional proficiency in stall awareness, spin entry, spins, and spin recovery procedures.

Appendix G to Part 141—Flight Instructor Additional Class Rating Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for a flight instructor additional class rating course required under this part, for the following ratings:
 - (a) Airplane single-engine.
 - (b) Airplane multiengine.
 - (c) Rotorcraft helicopter.
 - (d) Rotorcraft gyroplane.
2. ***Eligibility for enrollment.*** A person must hold a flight instructor certificate, with an aircraft category appropriate to the flight instructor rating for which the course applies.
3. ***Aeronautical knowledge training.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the 20 hours of ground training in the aeronautical knowledge areas listed in paragraph (b) of this section.
 - (b) Ground training must include the aeronautical knowledge areas specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
4. ***Flight training.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the 15 hours of flight training on the approved areas of operation of paragraph (c) of this section appropriate to the flight instructor rating for which the course applies.
 - (b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for the use of flight simulator training devices:
 - (1) The course may include training in a full flight simulator, flight training device, Enhanced Advanced Aviation Training Device (EAATD), aviation training device, or Extended Reality (XR) training system, provided the device or system

is approved or authorized by the Administrator in accordance with § 141.41, and provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.

- (2) Training in a full flight simulator that meets the requirements of § 141.41(a), may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (3) Training in a flight training device level 6 or level 7 that meets the requirements of § 141.41(a), may be credited for a maximum of 60 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 35 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

- (8) Training in full flight simulators or flight training devices described in paragraphs (b)(2) and (7) of this section, if used in combination, may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (c) Each approved course must include flight training on the approved areas of operation specified in-
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
5. ***Stage checks and end-of-course tests.***
- (a) Each student enrolled in a flight instructor course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the appropriate approved areas of operation listed in paragraph (c) of section No. 4 of this appendix appropriate to the flight instructor rating for which the course applies.

Appendix H to Part 141—Flight Instructor Instrument- Initial Certification (For an Airplane, Helicopter, or Powered-Lift Instrument Instructor Rating, as Appropriate) Certification Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for a flight instructor instrument certification course required under this part, for the following ratings:
 - (a) Flight Instructor Instrument—Airplane.
 - (b) Flight Instructor Instrument—Helicopter.
 - (c) Flight Instructor Instrument—Powered-lift aircraft.
2. ***Eligibility for enrollment.*** A person must hold the following prior to enrolling in the flight portion of the flight instructor instrument course:
 - (a) A commercial pilot certificate or airline transport pilot certificate with an aircraft category and class rating appropriate to the flight instructor category and class rating for which the course applies; and
 - (b) An instrument rating or privilege on that flight instructor applicant's pilot certificate that is appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies.
3. ***Aeronautical knowledge training.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 40 hours of ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies:
 - (b) Ground training must include the aeronautical knowledge areas specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
4. ***Flight training.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 15 hours of flight

training in the approved areas of operation of paragraph (c) of this section appropriate to the flight instructor rating for which the course applies.

(b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for the use of flight simulation flight training devices (FSTD):

- (1) The course may include training in a full flight simulator, flight training device, Enhanced Advanced Aviation Training Device (EAATD), aviation training device, or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, it is representative of the aircraft for which the course is approved for, meets requirements of this paragraph, and the training is given by an instructor.
- (2) Training in a full flight simulator that meets the requirements of § 141.41(a), may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (3) Training in a flight training device level 6 or level 7 that meets the requirements of § 141.41(a), may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for

those tasks and credit specifically authorized by the Administrator.

- (7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (8) Training in flight simulator flight training devices described in paragraphs (b)(2) and (7) of this section, if used in combination, may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (c) An approved course for the flight instructor-instrument rating must include flight training on the approved areas of operation that are specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
- 5. **Stage checks and end-of-course tests.** Each student enrolled in a flight instructor instrument course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (c) of section No. 4 of this appendix that are appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies.

Appendix I to Part 141—Flight Instructor Instrument-Add On-(For an Airplane, Helicopter, or Powered-Lift Instrument Instructor Rating, as Appropriate) Certification Course

1. Applicability. This appendix prescribes the minimum curriculum for a flight instructor instrument certification course being added to an existing flight instructor certificate required under this part, for the following ratings:
 - (a) Flight Instructor Instrument—Airplane.
 - (b) Flight Instructor Instrument—Helicopter.
 - (c) Flight Instructor Instrument—Powered-lift aircraft.
2. Eligibility for enrollment. A person must hold the following prior to enrolling in the flight portion of the flight instructor instrument course:
 - (a) A commercial pilot certificate or airline transport pilot certificate with an aircraft category and class rating appropriate to the flight instructor category and class rating for which the course applies;
 - (b) An instrument rating or privilege on that flight instructor applicant's pilot certificate that is appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies; and
 - (c) A flight instructor certificate with an aircraft category and class rating appropriate to the category and class being used for certification.
3. Aeronautical knowledge training.
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each approved course must include at least 20 hours of ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies:
 - (b) Ground training must include the following aeronautical knowledge areas specified in:
 - (1) The Practical Test Standards appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
 - (3) The aeronautical knowledge areas in which training is required for an instrument rating that is appropriate to the

aircraft category and class rating for the course which applies.

4. Flight training.

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each approved course must include at least 15 hours of flight training in the approved areas of operation of paragraph (c) of this section appropriate to the flight instructor rating for which the course applies.

(b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, For the use of full flight simulators or flight training devices:

(1) The course may include training in a full flight simulator or, flight training device, Enhanced Advanced Aviation Training Device (EAATD), aviation training device, or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided it is representative of the aircraft for which the course is approved for, meets requirements of this paragraph, and the training is given by an instructor.

(2) Training in a full flight simulator that meets the requirements of § 141.41(a), may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(3) Training in a flight training device level 6 or level 7 that meets the requirements of § 141.41(a), may be credited for a maximum of 5 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

- (6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
 - (7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
 - (8) Training in full flight simulators or flight training devices described in paragraphs (b)(2) through (7) of this section, if used in combination, may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. However, credit for training in a flight training device that meets the requirements of § 141.41(b) cannot exceed the limitation provided for in paragraph (b)(3) of this section.
- (c) An approved course for the flight instructor-instrument rating must include flight training on the following approved areas of operation that are appropriate to the instrument-aircraft category and class rating for which the course applies specified in:
 - (1) The Practical Test Standards (PTS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
- 5. Stage checks and end-of-course tests. Each student enrolled in a flight instructor instrument course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (c) of section No. 4 of this appendix that are appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or

powered-lift-instrument rating, as appropriate) for which the course applies.

Appendix J to Part 141—Ground Instructor Certification Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for a ground instructor certification course and an additional ground instructor rating course, required under this part, for the following ratings:
 - (a) Ground Instructor—Basic.
 - (b) Ground Instructor—Advanced.
 - (c) Ground Instructor—Instrument.
2. ***Aeronautical knowledge training.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of quality, each approved course must include at least the following ground training on the knowledge areas listed in paragraphs (b), (c), (d), and (e) of this section, appropriate to the ground instructor rating for which the course applies:
 - (1) 20 hours of training if the course is for an initial issuance of a ground instructor certificate; or
 - (2) 10 hours of training if the course is for an additional ground instructor rating.
 - (b) Ground training must include knowledge areas specified by a consensus standard that has been accepted by the Administrator, or, in the absence of such a standard, the following aeronautical knowledge areas:
 - (1) Learning process;
 - (2) Elements of effective teaching;
 - (3) Student evaluation and testing;
 - (4) Course development;
 - (5) Lesson planning; and
 - (6) Classroom training techniques.
 - (c) Ground training for a basic ground instructor certificate must include the aeronautical knowledge areas applicable to a sport and private pilot.
 - (d) Ground training for an advanced ground instructor rating must include the aeronautical knowledge areas applicable to a sport, private, commercial, and airline transport pilot.
 - (e) Ground training for an instrument ground instructor rating must include the aeronautical knowledge areas applicable to an instrument rating.
 - (f) A student who satisfactorily completed 2 years of study on the principles of education at a college or university may be credited

with 10 hours of the training required in paragraph (a)(1) of this section.

3. ***Stage checks and end-of-course tests.*** Each student enrolled in a ground instructor course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved knowledge areas in paragraph (b), (c), (d), and (e) of section No. 2 of this appendix appropriate to the ground instructor rating for which the course applies.

Appendix K to Part 141—Additional Aircraft Category and/or Class Rating Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for an additional aircraft category rating course or an additional aircraft class rating course required under this part, for the following ratings:
 - (a) Airplane single-engine.
 - (b) Airplane multiengine.
 - (c) Rotorcraft helicopter.
 - (d) Rotorcraft gyroplane.
 - (e) Powered-lift.
 - (f) Glider.
 - (g) Lighter-than-air airship.
 - (h) Lighter-than-air balloon.
2. ***Eligibility for enrollment.*** A person must hold the level of pilot certificate for the additional aircraft category and class rating for which the course applies prior to enrolling in the flight portion of an additional aircraft category or additional aircraft class rating course.
3. ***Aeronautical knowledge training.***
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for a sport pilot certificate, the following aeronautical knowledge areas must be included in a 10-hour ground training course for an additional aircraft category and/or class rating:
 - (1) Applicable regulations issued by the Federal Aviation Administration for sport pilot privileges, limitations, and flight operations;
 - (2) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence;
 - (3) Effects of density altitude on takeoff and climb performance;
 - (4) Weight and balance computations;
 - (5) Principles of aerodynamics, powerplants, and aircraft systems;
 - (6) Stall awareness, spin entry, spins, and spin recovery techniques if applying for an airplane single-engine rating; and
 - (7) Preflight action that includes how to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements.

- (b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for a private pilot certificate, the following aeronautical knowledge areas must be included in a 10-hour ground training course for an additional class rating or a 15-hour ground training course for an additional aircraft category and class rating:
 - (1) Applicable regulations issued by the Federal Aviation Administration for private pilot privileges, limitations, and flight operations;
 - (2) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence;
 - (3) Effects of density altitude on takeoff and climb performance;
 - (4) Weight and balance computations;
 - (5) Principles of aerodynamics, powerplants, and aircraft systems;
 - (6) Stall awareness, spin entry, spins, and spin recovery techniques if applying for an airplane single-engine rating; and
 - (7) Preflight action that includes how to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements.
- (c) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for a commercial pilot certificate, the following aeronautical knowledge areas must be included in a 15-hour ground training course for an additional class rating or a 20-hour ground training course for an additional aircraft category and class rating:
 - (1) Applicable regulations issued by the Federal Aviation Administration for commercial pilot privileges, limitations, and flight operations;
 - (2) Basic aerodynamics and the principles of flight;
 - (3) Safe and efficient operation of aircraft;
 - (4) Weight and balance computations;
 - (5) Use of performance charts;
 - (6) Significance and effects of exceeding aircraft performance limitations;
 - (7) Principles and functions of aircraft systems;

- (8) Maneuvers, procedures, and emergency operations appropriate to the aircraft;
 - (9) Nighttime and high-altitude operations; and
 - (10) Procedures for flight and ground training for lighter-than-air ratings.
- (d) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for an airline transport pilot certificate, the following aeronautical knowledge areas must be included in a 25-hour ground training course for an additional aircraft category and/or class rating:
- (1) Applicable regulations issued by the Federal Aviation Administration for airline transport pilot privileges, limitations, and flight operations;
 - (2) Meteorology, including knowledge and effects of fronts, frontal characteristics, cloud formations, icing, and upper-air data;
 - (3) General system of weather and NOTAM collection, dissemination, interpretation, and use;
 - (4) Interpretation and use of weather charts, maps, forecasts, sequence reports, abbreviations, and symbols;
 - (5) National Weather Service functions as they pertain to operations in the National Airspace System;
 - (6) Windshear and microburst awareness, identification, and avoidance;
 - (7) Principles of air navigation under instrument meteorological conditions in the National Airspace System;
 - (8) Air traffic control procedures and pilot responsibilities as they relate to en route operations, terminal area and radar operations, and instrument departure and approach procedures;
 - (9) Aircraft loading; weight and balance; use of charts, graphs, tables, formulas, and computations; and the effects on aircraft performance;
 - (10) Aerodynamics relating to an aircraft's flight characteristics and performance in normal and abnormal flight regimes;
 - (11) Human factors;
 - (12) Aeronautical decision making and judgment; and
 - (13) Crew resource management to include crew communication and coordination.
4. Flight training.

(a) Course for an additional airplane category and single-engine class rating.

(1) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for the sport pilot certificate, the course must include 15 hours of flight training on the areas of operations under part 141, appendix A, paragraph 4(a) that include—

(i) Two hours of flight training to an airport and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under § 61.100 of this chapter.

(2) For the private pilot certificate, the course must include 20 hours of flight training on the areas of operations under part 141, appendix B, paragraph 4(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—

(i) Three hours of cross country training in a single-engine airplane, except as provided under § 61.111 of this chapter;

(ii) Three hours of nighttime flight training in a single-engine airplane that includes one cross country flight of more than 100 nautical miles total distance, and 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and

(iii) Three hours of flight training in a single-engine airplane on the control and maneuvering of the airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.

(3) For the commercial pilot certificate, the course must include 55 hours of flight training on the areas of operations under part 141, appendix D, paragraph 4(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—

- (i) Five hours of instrument training in a single-engine airplane that includes training in instrument meteorological conditions or using a view-limiting device on attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. A portion of this training may be completed in a Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part;
 - (ii) Ten hours of training in a complex airplane, a turbine-powered airplane, or a technically advanced airplane that meets the requirements of § 61.129(j), or any combination thereof. The airplane must be appropriate to land or sea for the rating sought;
 - (iii) One 2-hour cross country flight during daytime conditions in a single-engine airplane, a total straight-line distance of more than 100 nautical miles from the original point of departure; and
 - (iv) One 2-hour cross country flight during nighttime conditions in a single-engine airplane, a total straight-line distance of more than 100 nautical miles from the original point of departure.
- (4) For the airline transport pilot certificate, the course must include 25 hours flight training, including 15 hours of instrument training, in a single-engine airplane on the areas of operation under part 141, appendix E, paragraph 4.(c). A flight simulation training device may be used in accordance with appendix E, paragraph 4(b).
- (b) Course for an additional airplane category and multiengine class rating.
 - (1) For the private pilot certificate, the course requires 20 hours flight training on the areas of operations under part 141, appendix B, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—
 - (i) Three hours of cross country training in a multiengine airplane, except as provided under § 61.111 of this chapter;
 - (ii) Three hours of nighttime flight training in a multiengine airplane that includes one cross country

- flight of more than 100 nautical miles total distance, and 2 takeoffs and 2 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and
 - (iii) Three hours of flight training in a multiengine airplane on the control and maneuvering of a multiengine airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.
- (2) For the commercial pilot certificate, the course requires 55 hours flight training on the areas of operations under part 141, appendix D, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—
- (i) Five hours of instrument training in a multiengine airplane including training instrument meteorological conditions or using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems, or any combination thereof. A portion of this training may be completed in a Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part;
 - (ii) Ten hours of training in a multiengine airplane that has retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered;
 - (iii) One 2-hour cross country flight during daytime conditions in a multiengine airplane, and a total straight-line distance of more than 100 nautical miles from the original point of departure; and
 - (iv) One 2-hour cross country flight during nighttime conditions in a multiengine airplane, and a total straight-line distance of more than 100 nautical miles from the original point of departure.
- (3) For the airline transport pilot certificate, the course requires 25 hours of flight training in a multiengine airplane on the areas of operation under part 141, appendix E, paragraph

4.(c). A flight simulation training device may be used in accordance with appendix E, paragraph 4(b). Training must include 15 hours of instrument training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. A portion of this training may be completed in a Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part.

(c) Course for an additional rotorcraft category and helicopter class rating.

(1) For the sport pilot certificate, the course requires 15 hours of flight training on the areas of operations under part 141, appendix A, paragraph 4. that includes—

(i) Two hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under § 61.100 of this chapter.

(2) For the private pilot certificate, the course requires 20 hours flight training on the areas of operations under part 141, appendix B, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—

(i) Except as provided under § 61.111 of this chapter, 3 hours of cross country flight training in a helicopter; and

(ii) Three hours of nighttime flight training in a helicopter that includes one cross country flight of more than 50 nautical miles total distance, and 2 takeoffs and 2 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(3) The commercial pilot certificate level requires 30 hours flight training on the areas of operations under appendix D of part 141, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—

(i) Five hours on the control and maneuvering of a helicopter solely by reference to instruments, and must include training in instrument meteorological conditions or using a view-limiting device for attitude instrument flying (or any combination thereof), on

- partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, or flight simulation training device;
 - (ii) One 2-hour cross country flight during daytime conditions in a helicopter, a total straight-line distance of more than 50 nautical miles from the original point of departure; and
 - (iii) One 2-hour cross country flight during nighttime conditions in a helicopter, a total straight-line distance of more than 50 nautical miles from the original point of departure.
- (4) For the airline transport pilot certificate, the course requires 25 hours of flight training, including 15 hours of instrument training, in a helicopter on the areas of operation under part 141, appendix E, paragraph 4. A flight simulation training device may be used in accordance with appendix E, paragraph 4(b).
- (d) Course for an additional rotorcraft category and a gyroplane class rating.
- (1) For the recreational or sport pilot certificate, the course requires 15 hours flight training on the areas of operations under part 141, appendix A, paragraph 4. that includes—
 - (i) Two hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under § 61.100 of this chapter.
 - (2) For the private pilot certificate, the course requires 20 hours flight training on the areas of operations under part 141, appendix B, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—
 - (i) Three hours of cross country flight training in a gyroplane, except as provided under § 61.111 of this chapter; and
 - (ii) Three hours of nighttime flight training in a gyroplane that includes one cross country flight of more than 50 nautical miles total distance, and 2 takeoffs and 2

landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(3) For the commercial pilot certificate, the course requires 30 hours flight training on the areas of operations of appendix D to part 141, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—

- (i) 2.5 hours on the control and maneuvering of a gyroplane solely by reference to instruments, and must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, flight simulator, flight training device, or an aviation training device.
- (ii) One 2-hour cross country flight during daytime conditions in a gyroplane, a total straight-line distance of more than 50 nautical miles from the original point of departure; and
- (iii) Two hours of flight training during nighttime conditions in a gyroplane at an airport, that includes 2 takeoffs and 2 landings to a full stop (with each landing involving a flight in the traffic pattern).

(e) Course for an additional lighter-than-air category and airship class rating.

(1) For the private pilot certificate, the course requires 20 hours of flight training on the areas of operation under part 141, appendix B, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—

- (i) Three hours of cross country flight training in an airship, except as provided under § 61.111 of this chapter;
- (ii) Three hours of nighttime flight training in an airship that includes one cross country flight of more than 25 nautical miles total distance and 5 takeoffs and 5 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and

- (iii) Three hours of flight training in an airship on the control and maneuvering of an airship solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.
- (2) For the commercial pilot certificate, the course requires 55 hours of flight training on the areas of operation under part 141, appendix D, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—
 - (i) Three hours of instrument training in an airship that must include training in instrument meteorological conditions or using a view-limiting device for attitude instrument flying (or any combination thereof), partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
 - (ii) One hour cross country flight during daytime conditions in an airship that consists of, a total straight-line distance of more than 25 nautical miles from the original point of departure; and
 - (iii) One hour cross country flight during nighttime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure.
- (f) Course for an additional lighter-than-air category and a gas balloon class rating.
 - (1) For the private pilot certificate, the course requires eight hours of flight training that includes 5 training flights on the areas of operations under part 141, appendix B, paragraph 4(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—
 - (i) Two flights of 1 hour each; and
 - (ii) One flight involving a controlled ascent to 3,000 feet above the launch site.
 - (2) For the commercial pilot certificate, the course requires 10 hours of flight training that includes eight training flights on

the areas of operations under part 141, appendix D, paragraph 4(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—

- (i) Two flights of 1 hour each; and
- (ii) One flight involving a controlled ascent to 5,000 feet above the launch site.

(g) Course for an additional lighter-than-air category and a hot air balloon class rating.

(1) For the private pilot certificate, the course requires eight hours of flight training that includes 5 training flights on the areas of operations under part 141, appendix B, paragraph 4(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—

- (i) Two flights of 30 minutes each; and
- (ii) One flight involving a controlled ascent to 2,000 feet above the launch site.

(2) For the commercial pilot certificate, the course requires 10 hours of flight training that includes eight training flights on the areas of operation under part 141, appendix D, paragraph 4(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—

- (i) Two flights of 30 minutes each; and
- (ii) One flight involving a controlled ascent to 3,000 feet above the launch site.

(h) Course for an additional powered-lift category rating.

(1) For the private pilot certificate, the course requires 20 hours flight training on the areas of operations under part 141, appendix B, paragraph 4(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—

- (i) Three hours of cross country flight training in a powered-lift except as provided under § 61.111 of this chapter;
- (ii) Three hours of nighttime flight training in a powered-lift that includes one cross-country flight of more than 100 nautical miles total distance, and 10 takeoffs and 10 landings to a full stop (with each

- landing involving a flight in the traffic pattern) at an airport; and
 - (iii) Three hours of flight training in a powered-lift on the control and maneuvering of a powered-lift solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight;
 - (2) For the commercial pilot certificate, the course requires 55 hours flight training on the areas of operations under part 141, appendix D, paragraph 4(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course includes—
 - (i) Five hours of instrument training in a powered-lift that must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
 - (ii) One 2-hour cross country flight during daytime conditions in a powered-lift, a total straight-line distance of more than 100 nautical miles from the original point of departure; and
 - (iii) One 2-hour cross country flight during nighttime conditions in a powered-lift, a total straight-line distance of more than 100 nautical miles from the original point of departure,
 - (3) For the airline transport pilot certificate, the course requires 25 hours flight training in a powered-lift on the areas of operation under part 141, appendix E, paragraph 4(c) that includes 15 hours of instrument training. A flight simulation training device may be used in accordance with appendix E, paragraph 4(b).
- (i) Course for an additional glider category rating.
 - (1) For the private pilot certificate, the course requires 4 hours of flight training in a glider on the areas of operations under part 141, appendix B, paragraph 4(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—

- (i) Five training flights in a glider with a certificated flight instructor on the launch/tow procedures approved for the course and on the appropriate approved areas of operation listed under appendix B, paragraph 4(d) of this part.
- (2) The commercial pilot certificate level requires 4 hours of flight training in a glider on the areas of operation under part 141, appendix D, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—
 - (i) Five training flights in a glider with a certificated flight instructor on the launch/tow procedures approved for the course and on the appropriate approved areas of operation listed in appendix D of part 141, paragraph 4.(d).
- (j) Course for an airplane's additional single-engine class rating.
 - (1) For the private pilot certificate, the course requires 3 hours of flight training in the areas of operations under part 141, appendix B, paragraph 4.(d)A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—
 - (i) Three hours of cross country training in a single-engine airplane, except as provided under § 61.111 of this chapter;
 - (ii) Three hours of nighttime flight training in a single-engine airplane that includes one cross country flight of more than 100 nautical miles total distance in a single-engine airplane and 2 takeoffs and 2 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and
 - (iii) Three hours of flight training in a single-engine airplane on the control and maneuvering of a single-engine airplane solely by reference to instruments in instrument meteorological conditions or using a view-limiting device, or any combination thereof, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to

instrument flight. A portion of this training may be completed in an Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part.

(2) For the commercial pilot certificate, the course requires 10 hours of flight training on the areas of operations under part 141, appendix D, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c).

(i) Five hours of instrument training in a single-engine airplane that must include training in instrument meteorological conditions or using a view-limiting device (or any combination thereof) for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. A portion of this training may be completed in a Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part

(ii) Ten hours of flight training in a complex airplane, a turbine-powered airplane, or a technically advanced airplane that meets the requirements of § 61.129(j) of this chapter or any combination thereof.

(3) For the airline transport pilot certificate, the course requires 25 hours flight training in a single-engine airplane on the areas of operation under appendix E to part 141, paragraph 4.(c), that includes 15 hours of instrument training. A flight simulation training device may be used in accordance with appendix E, paragraph 4(b).

(k) Course for an airplane additional multiengine class rating.

(1) For the private pilot certificate, the course requires 3 hours of flight training on the areas of operations of appendix B to part 141, paragraph 4(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—

(i) Three hours of flight training in a multiengine airplane on the control and maneuvering of a multiengine airplane solely by reference to instruments, in instrument meteorological conditions or using a view-limiting device, or any combination thereof.

Training must include straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.

- (2) For the commercial pilot certificate, the course requires 10 hours of training on the areas of operations under appendix D of part 141, paragraph 4(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—
 - (i) Two hours of instrument training in a multiengine airplane that must include training in instrument meteorological conditions or using a view-limiting device (or any combination thereof) on for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems; and
 - (ii) Ten hours of training in a multiengine airplane that has retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered;
- (3) For the airline transport pilot certificate, the course requires 25 hours of training in a multiengine airplane on the areas of operation of appendix E to part 141, paragraph 4.(c) that includes 15 hours of instrument training. Training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. A flight simulation training device may be used in accordance with appendix E, paragraph 4(b).
- (l) Course for a rotorcraft additional helicopter class rating.
 - (1) For the sport pilot certificate, the course requires 3 hours of flight training on the areas of operations under appendix A of part 141, paragraph 4.(c) that includes—
 - (i) Two hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under § 61.100 of this chapter.
 - (2) For the private pilot certificate, the course requires 3 hours flight training on the areas of operations under appendix B of

part 141, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—

- (i) Three hours of cross country training in a helicopter, except as provided under § 61.111 of this chapter; and
 - (ii) Three hours of nighttime flight training in a helicopter that includes one cross country flight of more than 50 nautical miles total distance, and 2 takeoffs and 2 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
- (3) For the commercial pilot certificate, the course requires 5 hours flight training on the areas of operations under appendix D of part 141, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—
- (i) Five hours on the control and maneuvering of a helicopter solely by reference to instruments, and must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, flight simulator, flight training device, or an aviation training device;
 - (ii) One 2-hour cross country flight during daytime conditions in a helicopter and, a total straight-line distance of more than 50 nautical miles from the original point of departure; and
 - (iii) One 2-hour cross country flight during nighttime conditions in a helicopter and a total straight-line distance of more than 50 nautical miles from the original point of departure.
- (4) For the airline transport pilot certificate, the course requires 25 hours of flight training in a helicopter on the areas of operation under appendix E of part 141, paragraph 4.(c) that includes 15 hours of instrument training. Training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. A flight simulation

training device may be used in accordance with appendix E, paragraph 4(b).

(m) Course for a rotorcraft additional gyroplane class rating.

(1) For the sport pilot certificate, the course requires 3 hours flight training on the areas of operations of appendix A to part 141, paragraph 4.(c) that includes—

(i) Except as provided under § 61.100 of this chapter, 2 hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings.

(2) For the private pilot certificate, the course requires 3 hours flight training on the areas of operations of appendix B to part 141, paragraph 4.(d) A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—

(i) Three hours of cross country training in a gyroplane; and

(ii) Three hours of nighttime flight training in a gyroplane that includes one cross country flight of more than 50 nautical miles total distance, and 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(3) For the commercial pilot certificate, the course requires 5 hours flight training on the areas of operations of appendix D to part 141, paragraph 4.(d) A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—

(i) 2.5 hours on the control and maneuvering of a gyroplane solely by reference to instruments, and must include training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training on attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in a flight simulation training device; and

(ii) Two hours of flight training during nighttime conditions in a gyroplane at an airport that includes 2 takeoffs

and 2 landings to a full stop (with each landing involving a flight in the traffic pattern).

(n) Course for a lighter-than-air additional airship class rating.

(1) For the private pilot certificate, the course requires 20 hours of flight training on the areas of operation under appendix B of part 141, paragraph 4.(d)A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—

- (i) Three hours of cross country training in an airship, except as provided under § 61.111 of this chapter;
- (ii) Three hours of nighttime flight training in an airship that includes one cross country flight of more than 25 nautical miles total distance, and 5 takeoffs and 5 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and
- (iii) Three hours of flight training in an airship on the control and maneuvering of an airship solely by reference to instruments in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must include straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.

(2) For the commercial pilot certificate, the course requires 55 hours of flight training on the areas of operation under appendix D of part 141, paragraph 4.(d)A flight simulation training device may be used in accordance with appendix D paragraph 4(c). The course must include—

- (i) Three hours of instrument training in an airship in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must include attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
- (ii) One hour cross country flight during daytime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure; and

- (iii) One hour cross country flight during nighttime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure.
- (o) Course for a lighter-than-air additional gas balloon class rating.
 - (1) For the private pilot certificate, the course requires eight hours of flight training that includes 5 training flights on the areas of operations under appendix B of part 141, paragraph 4.(d)A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—
 - (i) Two flights of 1 hour each; and
 - (ii) One flight involving a controlled ascent to 3,000 feet above the launch site.
 - (2) For the commercial pilot certificate, the course requires 10 hours of flight training that includes eight training flights on the areas of operations of appendix D to part 141, paragraph 4.(d)A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—
 - (i) Two flights of 1 hour each; and
 - (ii) One flight involving a controlled ascent to 5,000 feet above the launch site.
- (p) Course for a lighter-than-air additional hot air balloon class rating.
 - (1) For the private pilot certificate, the course requires 8 hours of flight training that includes 5 training flights on the areas of operations of appendix B to part 141, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). The course must include—
 - (i) Two flights of 30 minutes each; and
 - (ii) One flight involving a controlled ascent to 2,000 feet above the launch site.
 - (2) For the commercial pilot certificate, the course requires 10 hours of flight training that includes eight training flights on the areas of operation of appendix D to part 141, paragraph 4.(d). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). The course must include—
 - (i) Two flights of 30 minutes each, and

- (ii) One flight involving a controlled ascent to 3,000 feet above the launch site.

5. ***Stage checks and end-of-course tests.***

- (a) Each student enrolled in an additional aircraft category rating course or an additional aircraft class rating course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation in section No. 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies at the appropriate pilot certificate level.
- (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix L to Part 141—Aircraft Type Rating Course, For Other Than an Airline Transport Pilot Certificate

1. ***Applicability.*** This appendix prescribes the minimum curriculum for an aircraft type rating course other than an airline transport pilot certificate, for:
 - (a) A type rating in an airplane category—single-engine class.
 - (b) A type rating in an airplane category—multiengine class.
 - (c) A type rating in a rotorcraft category—helicopter class.
 - (d) A type rating in a powered-lift category.
 - (e) Other aircraft type ratings specified by the Administrator through the aircraft type certificate procedures.
2. ***Eligibility for enrollment.*** Prior to enrolling in the flight portion of an aircraft type rating course, a person must hold at least a private pilot certificate and:
 - (a) An instrument rating in the category and class of aircraft that is appropriate to the aircraft type rating for which the course applies, provided the aircraft's type certificate does not have a VFR limitation; or
 - (b) Be concurrently enrolled in an instrument rating course in the category and class of aircraft that is appropriate to the aircraft type rating for which the course applies, and pass the required instrument rating practical test concurrently with the aircraft type rating practical test.
3. ***Aeronautical knowledge training.***
 - (a) Each approved course must include at least 10 hours of ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the aircraft type rating for which the course applies.
 - (b) Ground training must include the following aeronautical areas:
 - (1) Proper control of airspeed, configuration, direction, altitude, and attitude in accordance with procedures and limitations contained in the aircraft's flight manual, checklists, or other approved material appropriate to the aircraft type;
 - (2) Compliance with approved en route, instrument approach, missed approach, ATC, or other applicable procedures that apply to the aircraft type;
 - (3) Subjects requiring a practical knowledge of the aircraft type and its powerplant, systems, components, operational, and performance factors;

- (4) The aircraft's normal, abnormal, and emergency procedures, and the operations and limitations relating thereto;
- (5) Appropriate provisions of the approved aircraft's flight manual;
- (6) Location of and purpose for inspecting each item on the aircraft's checklist that relates to the exterior and interior preflight; and
- (7) Use of the aircraft's prestart checklist, appropriate control system checks, starting procedures, radio and electronic equipment checks, and the selection of proper navigation and communication radio facilities and frequencies.

4. *Flight training.*

- (a) Each approved course must include at least:
 - (1) Flight training on the approved areas of operation of paragraph (c) of this section in the aircraft type for which the course applies; and
 - (2) 10 hours of training, of which at least 5 hours must be instrument training in the aircraft for which the course applies.
- (b) For the use of flight simulation training devices (FSTDs):
 - (1) The course may include training in a full flight simulator, flight training device, Enhanced Advanced Aviation Training Device (EAATD), Aviation Training Device (AATD), or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, it is representative of the aircraft for which the course is approved, meets requirements of this paragraph, and the training is given by an authorized instructor.
 - (2) Training in a full flight simulator that meets the requirements of § 141.41(a), may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (3) Training in a flight training device Level 6 or Level 7 that meets the requirements of § 141.41(a), may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a

Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 60 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

- (5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (8) Training in flight simulation training devices described in paragraphs (b)(2) and (7) of this section, if used in combination, may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (c) Each approved course must include the flight training on the areas of operation specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

5. Stage checks and end-of-course tests.

- (a) Each student enrolled in an aircraft type rating course must satisfactorily accomplish the stage checks and end-of-course tests,

in accordance with the school's approved training course, consisting of the approved areas of operation that are appropriate to the aircraft type rating for which the course applies at the airline transport pilot certificate level; and

Appendix M to Part 141—Special Preparation Courses

1. **Applicability.** This appendix prescribes the minimum curriculum for the special preparation courses that are listed in § 141.11 of this part.
2. **Eligibility for enrollment.** Prior to enrolling in the flight portion of a special preparation course, a person must hold a pilot certificate, flight instructor certificate, or ground instructor certificate that is appropriate for the exercise of the operating privileges or authorizations sought.
3. **General requirements.**
 - (a) To be approved, a special preparation course must:
 - (1) Meet the appropriate requirements of this appendix; and
 - (2) Prepare the graduate with the necessary skills, competency, and proficiency to exercise safely the privileges of the certificate, rating, or authorization for which the course is established.
 - (b) An approved special preparation course must include ground and flight training on the operating privileges or authorization sought, for developing competency, proficiency, resourcefulness, self-confidence, and self-reliance in the student.
4. **Use of flight simulation training devices.**
 - (a) The approved special preparation course may include training in a full flight simulator, flight training device, aviation training device, Enhanced Advanced Aviation Training Device (EAATD), or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided it is representative of the aircraft for which the course is approved, meets requirements of this paragraph, and the training is given by an authorized instructor. A flight instructor enhanced qualification training program may include training in an advanced aviation training device in accordance with paragraph 14 of this appendix and § 61.195(h)(3)(v) of this chapter.
 - (b) Except for the airline transport pilot certification program in paragraph 13 of this appendix and the flight instructor enhanced qualification training program in paragraph 14 of this appendix, training in a full flight simulator that meets the requirements of § 141.41(a) may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (c) Except for the airline transport pilot certification program in paragraph 13 of this appendix and the flight instructor enhanced

qualification training program in paragraph 14 of this appendix, training in a flight training device level 6 and level 7 that meets the requirements of § 141.41(a), may be credited for a maximum of 35 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

- (d) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (e) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (f) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 150 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
 - (g) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
 - (h) Training in the full flight simulators or flight training devices described in paragraphs (b) through (g) of this section, if used in combination, may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less
5. **Stage check and end-of-course tests.** Each person enrolled in a special preparation course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation that are appropriate to the operating privileges or authorization sought, and for which the course applies.

6. ***Agricultural aircraft operations course.*** An approved special preparation course for pilots in agricultural aircraft operations must include at least the following—
 - (a) 25 hours of training on:
 - (1) Agricultural aircraft operations;
 - (2) Safe piloting and operating practices and procedures for handling, dispensing, and disposing of agricultural and industrial chemicals, including operating in and around congested areas; and
 - (3) Applicable provisions of part 137 of this chapter.
 - (b) 15 hours of flight training on agricultural aircraft operations.
7. ***Rotorcraft external-load operations course.*** An approved special preparation course for pilots of external-load operations must include at least the following—
 - (a) 10 hours of training on:
 - (1) Rotorcraft external-load operations;
 - (2) Safe piloting and operating practices and procedures for external-load operations, including operating in and around congested areas; and
 - (3) Applicable provisions of part 133 of this chapter.
 - (b) 15 hours of flight training on external-load operations.
8. ***Test pilot course.*** An approved special preparation course for pilots in test pilot duties must include at least the following—
 - (a) Aeronautical knowledge training on:
 - (1) Performing aircraft maintenance, quality assurance, and certification test flight operations;
 - (2) Safe piloting and operating practices and procedures for performing aircraft maintenance, quality assurance, and certification test flight operations;
 - (3) Applicable parts of this chapter that pertain to aircraft maintenance, quality assurance, and certification tests; and
 - (4) Test pilot duties and responsibilities.
 - (b) 15 hours of flight training on test pilot duties and responsibilities.
9. ***Special operations course.*** An approved special preparation course for pilots in special operations that are mission-specific for certain aircraft must include at least the following—
 - (a) Aeronautical knowledge training on:
 - (1) Performing that special flight operation;
 - (2) Safe piloting operating practices and procedures for performing that special flight operation;

- (3) Applicable parts of this chapter that pertain to that special flight operation; and
 - (4) Pilot-in-command duties and responsibilities for performing that special flight operation.
- (b) Flight training:
 - (1) On that special flight operation; and
 - (2) To develop skills, competency, proficiency, resourcefulness, self-confidence, and self-reliance in the student for performing that special flight operation in a safe manner.
- 10. **Pilot refresher course.** An approved special preparation pilot refresher course for a pilot certificate, aircraft category and class rating, or an instrument rating must include at least the following—
 - (a) 4 hours of aeronautical knowledge training on:
 - (1) The aeronautical knowledge areas that are applicable to the level of pilot certificate, aircraft category and class rating, or instrument rating, as appropriate, that pertain to that course;
 - (2) Safe piloting operating practices and procedures; and
 - (3) Applicable provisions of parts 61 and 91 of this chapter for pilots.
 - (b) 6 hours of flight training on the approved areas of operation that are applicable to the level of pilot certificate, aircraft category and class rating, or instrument rating, as appropriate, for performing pilot-in-command duties and responsibilities.
- 11. **Flight instructor refresher course.** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, an approved special preparation flight instructor refresher course must include at least a combined total of 16 hours of aeronautical knowledge training, flight training, or any combination of ground and flight training on the following—
 - (a) Aeronautical knowledge training on:
 - (1) The aeronautical knowledge areas of part 61 of this chapter that apply to student, sport, private, and commercial pilot certificates and instrument ratings;
 - (2) The aeronautical knowledge areas of part 61 of this chapter that apply to flight instructor certificates;
 - (3) Safe piloting operating practices and procedures, including airport operations and operating in the National Airspace System; and
 - (4) Applicable provisions of parts 61 and 91 of this chapter that apply to pilots and flight instructors.

- (b) Flight training to review:
 - (1) The approved areas of operations applicable to student, sport, private, and commercial pilot certificates and instrument ratings; and
 - (2) The skills, competency, and proficiency for performing flight instructor duties and responsibilities.
- 12. **Ground instructor refresher course.** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of quality, an approved special preparation ground instructor refresher course must include at least 16 hours of aeronautical knowledge training on:
 - (a) The aeronautical knowledge areas of part 61 of this chapter that apply to student, sport, private, and commercial pilots and instrument rated pilots;
 - (b) The aeronautical knowledge areas of part 61 of this chapter that apply to ground instructors;
 - (c) Safe piloting operating practices and procedures, including airport operations and operating in the National Airspace System; and
 - (d) Applicable provisions of parts 61 and 91 of this chapter that apply to pilots and ground instructors.
- 13. **Flight instructor enhanced qualification training program.** An approved flight instructor enhanced qualification training program must include the ground and flight training specified in § 61.195(h)(3) of this chapter. The FAA will not approve a course with fewer hours than those prescribed in § 61.195(h)(3) of this chapter.

Appendix N to Part 141—Pilot Ground School Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for a pilot ground school course required under this part.
2. ***General requirements.*** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of quality, an approved course of training for a pilot ground school must include training on the aeronautical knowledge areas that are:
 - (a) Needed to safely exercise the privileges of the certificate, rating, or authority for which the course is established; and
 - (b) Conducted to develop competency, proficiency, resourcefulness, self-confidence, and self-reliance in each student.
3. ***Aeronautical knowledge training requirements.*** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of quality, each approved pilot ground school course must include:
 - (a) The aeronautical knowledge training that is appropriate to the aircraft rating and pilot certificate level for which the course applies; and
 - (b) An adequate number of total aeronautical knowledge training hours appropriate to the aircraft rating and pilot certificate level for which the course applies.
4. ***Stage checks and end-of-course tests.*** Each person enrolled in a pilot ground school course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation that are appropriate to the operating privileges or authorization that graduation from the course will permit and for which the course applies.

Appendix O to Part 141—Combined Private Pilot Certification and Instrument Rating Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for a combined private pilot certification and instrument rating course required under this part, for the following ratings:
 - (a) Airplane.
 - (1) Airplane single-engine.
 - (2) Airplane multiengine.
 - (b) Rotorcraft helicopter.
 - (c) Powered-lift.
2. ***Eligibility for enrollment.*** A person must hold a sport pilot, recreational, or student pilot certificate prior to enrolling in the flight portion of a combined private pilot certification and instrument rating course.
3. ***Aeronautical knowledge training.***
 - (a) Each approved course must include at least 65 hours of ground training on the aeronautical knowledge areas referenced in paragraph (b) of this section that are appropriate to the aircraft category and class rating of the course:
 - (b) Ground training must include the aeronautical knowledge areas:
 - (1) Specified in the Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) Specified in a consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
4. ***Flight training.***
 - (a) Each approved course must include at least 70 hours of training, as described in section 4 and section 5 of this appendix, on the approved areas of operation listed in paragraph (d) of section 4 of this appendix that are appropriate to the aircraft category and class rating of the course:
 - (b) Each approved course must include at least the following flight training:
 - (1) ***For an airplane single-engine course:*** 70 hours of flight training from an authorized instructor on the approved areas of operation in paragraph (d) of this section that includes at least—
 - (i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a single-engine airplane.

- (ii) 3 hours of night flight training in a single-engine airplane that includes—
 - (A) One cross-country flight of more than 100 nautical miles total distance.
 - (B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
 - (iii) 35 hours of instrument flight training in a single-engine airplane that includes at least one cross-country flight that is performed under IFR and—
 - (A) Is a distance of at least 250 nautical miles along airways or air traffic control-directed (ATC-directed) routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports.
 - (B) Involves an instrument approach at each airport.
 - (C) Involves three different kinds of approaches with the use of navigation systems.
- (2) ***For an airplane multiengine course:*** 70 hours of training from an authorized instructor on the approved areas of operation in paragraph (d)_ of this section that includes at least—
 - (i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a multiengine airplane.
 - (ii) 3 hours of night flight training in a multiengine airplane that includes—
 - (A) One cross-country flight of more than 100 nautical miles total distance.
 - (B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
 - (iii) 35 hours of instrument flight training in a multiengine airplane that includes at least one cross-country flight that is performed under IFR and—
 - (A) Is a distance of at least 250 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a

straight-line distance of 100 nautical miles between airports.

(B) Involves an instrument approach at each airport.

(C) Involves three different kinds of approaches with the use of navigation systems.

(3) **For a rotorcraft helicopter course:** 70 hours of training from an authorized instructor on the approved areas of operation in paragraph (d) of this section that includes at least—

(i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a helicopter.

(ii) 3 hours of night flight training in a helicopter that includes—

(A) One cross-country flight of more than 50 nautical miles total distance.

(B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(iii) 35 hours of instrument flight training in a helicopter that includes at least one cross-country flight that is performed under IFR and—

(A) Is a distance of at least 100 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 50 nautical miles between airports.

(B) Involves an instrument approach at each airport.

(C) Involves three different kinds of approaches with the use of navigation systems.

(4) **For a powered-lift course:** 70 hours of training from an authorized instructor on the approved areas of operation in paragraph (d) of this section that includes at least—

(i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a powered-lift.

(ii) 3 hours of night flight training in a powered-lift that includes—

(A) One cross-country flight of more than 100 nautical miles total distance.

- (B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
 - (iii) 35 hours of instrument flight training in a powered-lift that includes at least one cross-country flight that is performed under IFR and—
 - (A) Is a distance of at least 250 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports.
 - (B) Involves an instrument approach at each airport.
 - (C) Involves three different kinds of approaches with the use of navigation systems.
- (c) For use of flight simulation training devices (FSTDs):
 - (1) The course may include training in a combination of full flight simulators, flight training devices, aviation training devices, Enhanced Advanced Aviation Training Devices, or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided it is representative of the aircraft for which the course is approved, meets the requirements of this section, and the training is given by an authorized instructor.
 - (2) Training in a full flight simulator that meets the requirements of § 141.41(a) may be credited for a maximum of 65 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (3) Training in a flight training device level 6 or level 7 that meets the requirements of § 141.41(a) or an aviation training device that meets the requirements of § 141.41(b) may be credited for a maximum of 60 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

- (5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 30 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (8) Training in a combination of flight simulators, flight training devices, or aviation training devices, described in paragraphs (c)(2) through (7) of this section, may be credited for a maximum of 65 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (d) Each approved course must include the flight training on the approved areas of operation specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) Specified in a consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
- 5. ***Solo flight training.*** Each approved course must include at least the following solo flight training:
 - (a) ***For a combined private pilot certification and instrument rating course involving an airplane single-engine:*** Five hours of flying solo in a single-engine airplane on the appropriate areas of

operation in paragraph (d) of section 4 of this appendix that includes at least—

- (1) One solo cross-country flight of at least 100 nautical miles with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles between the takeoff and landing locations.
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (b) ***For a combined private pilot certification and instrument rating course involving an airplane multiengine:*** Five hours of flying solo in a multiengine airplane or 5 hours of performing the duties of a pilot-in-command while under the supervision of an authorized instructor. The training must consist of the appropriate areas of operation in paragraph (d) of section 4 of this appendix, and include at least—
- (1) One cross-country flight of at least 100 nautical miles with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles between the takeoff and landing locations.
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (c) ***For a combined private pilot certification and instrument rating course involving a helicopter:*** Five hours of flying solo in a helicopter on the appropriate areas of operation in paragraph (d) of section 4 of this appendix that includes at least—
- (1) One solo cross-country flight of more than 50 nautical miles with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 25 nautical miles between the takeoff and landing locations.
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (d) ***For a combined private pilot certification and instrument rating course involving a powered-lift:*** Five hours of flying solo in a powered-lift on the appropriate areas of operation in paragraph (d) of section 4 of this appendix that includes at least—
- (1) One solo cross-country flight of at least 100 nautical miles with landings at a minimum of three points, and one segment

of the flight consisting of a straight-line distance of at least 50 nautical miles between the takeoff and landing locations.

- (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

6. ***Stage checks and end-of-course tests.***

- (a) Each student enrolled in a private pilot course must satisfactorily accomplish the stage checks and end-of-course tests in accordance with the school's approved training course that consists of the approved areas of operation listed in paragraph (d) of section 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies.
- (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix P to Part 141 — Professional Pilot Track

1. **Applicability.** This appendix prescribes the minimum curriculum for a *Professional track Program* in the airplane category, designed to develop professional pilot knowledge, skills, and operational discipline consistent with airline and corporate flight standards.
2. **General.** A Professional Pilot track curriculum requires:
 - (a) Courses for the following FAA certifications and ratings:
 - (1) Private Pilot (Single-Engine Land)
 - (2) Instrument Rating
 - (3) Commercial Pilot (Single-Engine or Multi-Engine)
 - (4) Commercial additional class rating (Single-Engine or Multi-Engine) course.
 - (b) A minimum total of 200 hours of flight training across all courses in the Professional Pilot Track.
 - (c) Industry Advisory Board Feedback
 - (1) Each Professional Track program must include a process for obtaining regular input from an Industry Advisory Board (IAB) to ensure that training remains aligned with current aviation industry needs and professional standards.
 - (2) The IAB should include representatives from aviation sectors relevant to the course, such as airlines, corporate flight operations, manufacturers, maintenance organizations, or professional associations, and may also include graduates currently employed in industry roles.
 - (3) The IAB must meet at least once each year to review:
 - (i) Current and emerging trends in flight operations, safety, and technology;
 - (ii) Industry feedback on graduate performance and professional readiness; and
 - (iii) Recommendations for improvements to course content, instructional methods, and assessment standards.
 - (4) The school must document each meeting and summarize the feedback received, along with any resulting curriculum adjustments or action items. This record must be retained and made available for FAA review.
 - (5) Feedback from the IAB must be formally reviewed during each curriculum revision cycle. The school must evaluate the relevance and applicability of all recommendations and incorporate appropriate updates to course objectives,

content, or training methods to ensure that the curriculum remains current, industry-driven, and outcome-focused.

3. Unless otherwise determined through consensus standards approved by the Administrator for use of Flight Simulators Training Devices (FSTDs):
 - (a) The Professional Pilot Track courses may include training in a full flight simulator, flight training device, aviation training devices, Enhanced Advanced Aviation Training Devices (EAATD), or extended reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.
 - (b) Training in a full flight simulator that meets the requirements of § 141.41(a) may be credited for a maximum of 60 percent of the total flight training hour requirements of the Professional Pilot Track.
 - (c) Training in a Flight Training Device (FTD) level 6 or level 7 that meets the requirements of § 141.41(a) may be credited for a maximum of 55 percent of the total flight training hour requirements of the Professional Pilot Track.
 - (d) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (e) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 45 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (f) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
 - (g) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15

percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

- (h) Training in FSTDs described in paragraphs (4)(a) through (g) of this section, if used in combination, may be credited for a maximum of 60 percent of the total flight training hour requirements of the Professional Pilot Track.

Appendix P.1 Professional Track Private Pilot Course (airplane Single—Engine Land)

1. **Eligibility for enrollment.** A person must hold a student pilot certificate before enrolling in the solo flight phase of the course.
2. **Aeronautical knowledge training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 35 hours of ground training on the aeronautical knowledge areas specified in:
 - (b) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (c) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
 - (d) In addition, ground training must include:
 - (1) Use of professional standard operating procedures (SOPs), checklist flows, and callouts;
 - (2) Application of threat-and-error management (TEM) and risk assessment models;
 - (3) Human performance and limitations, including fatigue and workload management;
 - (4) Safety Management Systems
 - (5) Weather interpretation for strategic and tactical decision-making; and
 - (6) Professional communication, briefing, and debriefing techniques.
3. **Flight training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 35 hours of flight training on the approved areas of operation specified in:

- (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or.
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
- (b) In addition, the course must emphasize:
 - (1) Precision aircraft control using designed flight profiles;
 - (2) Scenario training and experiences to build aeronautical decision making skills;
 - (3) Integration of automation management, avionics use, and situational awareness; and
 - (4) Use of checklists, flows, callouts, briefings, and standard phraseology.
- 4. **Solo flight training.** Each approved course must include at least the following solo flight training:
 - (a) *For an airplane single-engine course:* 5 hours of solo flight training in a single-engine airplane on the approved areas of operation in paragraph (d)(1) of section No. 4 of this appendix that includes at least—
 - (1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations; and
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- 5. **Stage checks and end-of-course tests.**
 - (a) Each student enrolled in a private pilot course must satisfactorily accomplish the stage checks and end-of-course tests in accordance with the school's approved training course, consisting of the approved areas of operation listed in section 2(b) and 3(b) of this appendix that are appropriate to the aircraft category and class rating for which the course applies.
 - (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix P.2 Professional Track Instrument Rating Course (Airplane Single-Engine)

- 1. Applicability.** This appendix prescribes the minimum curriculum for a *Professional Track Instrument Rating Course* designed to integrate advanced procedural proficiency, automation management, and professional communication practices.
- 2. Eligibility for enrollment.** A person must—
 - (a) Hold a Private Pilot Certificate with an Airplane Single-Engine class rating; and
 - (b) Have completed ground and flight training through an FAA-approved Professional Track Private Pilot (Airplane Single-Engine) Course.
- 3. Aeronautical knowledge training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 30 hours of knowledge training on the approved areas of operation specified in:
 - i. The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or.
 - ii. A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
 - (b) In addition, the course must emphasize:
 - iii. Crew resource management (CRM) principles;
 - iv. Technically Advanced Aircraft (TAA) Systems
 - v. Scenario-based risk management in IMC; and
 - vi. Automation Management and Mode Awareness
 - vii. Use of advanced avionics and flight management systems.
- 4. Flight training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 35 hours of flight training on the approved areas of operation specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or.
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

- (b) In addition, the course must emphasize:
 - (1) Automation and Mode Awareness under IFR;
 - (2) Advanced navigation procedures (RNAV, LPV, and SID/STAR operations);
 - (3) Scenario-Based LOFT-Style IFR Missions; and
 - (4) An emphasis on maintaining professional discipline, procedural accuracy, and workload management throughout all phases of instrument flight.
- 5. **Stage checks and end-of-course tests.**

Each student must demonstrate proficiency in instrument procedures and professional crew coordination equivalent to the standards for commercial operations.

Appendix P.3 Professional Track Commercial Pilot Certification Course (Airplane Single-Engine or Multi-Engine)

- 1. **Applicability.** This appendix prescribes the minimum curriculum for a *Professional Track Commercial Pilot Certification Course* in the airplane single-engine category for applicants who have completed the Professional Track Private Pilot and Professional Track Instrument Rating courses.
- 2. **Eligibility for enrollment.** A person must—
 - (a) Hold a Private Pilot Certificate with an Airplane Single-Engine class and Instrument Rating; and
 - (b) Have completed ground and flight training through an FAA-approved Professional Track Private Pilot (Airplane Single-Engine) Course; and
 - (c) Have completed ground and flight training through an FAA-approved Professional Track Instrument Rating Course.
- 3. **Aeronautical knowledge training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 35 hours of knowledge training on the approved areas of operation specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or.
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
 - (b) In addition, the course must include:

- (1) Professional flight operations and standardization;
- (2) Energy management and aircraft performance analysis;
- (3) Human factors in high-performance environments; and
- (4) Scenario training for risk-based decision-making in commercial operations;
- (5) Cognitive load theory; and
- (6) Startle effect & stress response.

4. Flight training.

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 65 hours of training on the areas of operation specified in:

- (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or.
- (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

(b) For an airplane single-engine course::

- (1) 55 hours of flight training from a certificated flight instructor on the applicable areas of operation listed in paragraph (a) of this section that includes at least
 - (i) Ten hours of instrument training in instrument meteorological conditions or using a view-limiting device including attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. Five hours of the 10 hours required on instrument training must be in a single-engine airplane;
 - (ii) Ten hours of training in a complex airplane, a turbine-powered airplane, or a technically advanced airplane that meets the requirements of § 61.129(j) of this chapter, or any combination thereof. The airplane must be appropriate to for the rating sought;
 - (iii) One 2-hour cross country flight in daytime conditions in a single-engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure;
 - (iv) One 2-hour cross country flight in nighttime conditions in a single-engine airplane that consists of a total

straight-line distance of more than 100 nautical miles from the original point of departure; and

- (v) 10 total takeoff and landings at an airport with an operating control tower.

(c) For an airplane multi-engine course:

- (1) 55 hours of flight training from a certificated flight instructor on the applicable areas of operation listed in paragraph (a) of this section that includes at least:

- (i) Ten hours of instrument training in instrument meteorological conditions or using a view-limiting device including attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. Five hours of the 10 hours required on instrument training must be in a multi-engine airplane;
- (ii) Ten hours of training in a complex airplane, a turbine-powered airplane, or a technically advanced airplane that meets the requirements of § 61.129(j) of this chapter, or any combination thereof. The airplane must be appropriate to for the rating sought;
- (iii) One 2-hour cross country flight in daytime conditions in a multi-engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure;
- (iv) One 2-hour cross country flight in nighttime conditions in a multi-engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; and
- (v) 10 total takeoff and landings at an airport with an operating control tower.

(d) Training must also include:

- (1) Advanced cross country training;
- (2) Use of checklists, flows, callouts, briefings, and standard phraseology.
- (3) Management of automation, performance, and workload under realistic operational scenarios;
- (4) Application of SOPs, profiles, and professional airmanship throughout; and
- (5) Realistic emergency scenario training and experience.

5. Solo training. Each approved course must include at least the following solo flight training:

(a) *For an airplane single-engine course.* Ten hours of solo flight time in a single-engine airplane, or 10 hours of flight time while performing the duties of pilot-in-command in a single-engine airplane with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under Appendix D § 4(d), and include—

- (1) One cross-country flight of not less than 300 nautical miles total distance, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii, the longest segment need only have a straight-line distance of at least 150 nautical miles;
- (2) 5 hours in night VFR conditions with 2 takeoffs and 2 landings; and
- (3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.

(b) *For an airplane multi-engine course.* Ten hours of solo flight time in a multi-engine airplane, or 10 hours of flight time while performing the duties of pilot-in-command in a multi-engine airplane with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under Appendix D § 4(d), and include—

- (1) One cross-country flight of not less than 300 nautical miles total distance, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii, the longest segment need only have a straight-line distance of at least 150 nautical miles;
- (2) 5 hours in night VFR conditions with 2 takeoffs and 2 landings; and
- (3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.

6. Stage checks and end-of-course tests. Each student must demonstrate commercial-level mastery of the areas of operation and professional standards of discipline and decision-making equivalent to those expected in multi-crew or corporate environments.

Appendix P.4- Professional Track Commercial Pilot Additional Class (Single-Engine or Multi-Engine) Course

- 1. Applicability.** This appendix prescribes the minimum curriculum for a *Professional Track Commercial Pilot Additional Class (Single-Engine or Multi-Engine)) Course* for applicants who hold a Commercial Pilot Certificate seeking to add an additional class rating.
- 2. Eligibility for enrollment.** A person must—
 - (a) Hold a Commercial Pilot Certificate;
 - (b) Have completed ground and flight training through an FAA-approved Professional Track Private Pilot (Airplane Single-Engine) Course;
 - (c) Have completed ground and flight training through an FAA-approved Professional Track Instrument Rating Course; and
 - (d) Have completed ground and flight training through an FAA-approved Professional Track Commercial Pilot (Airplane Single-Engine or Multi-Engine) Course.
- 3. Aeronautical knowledge training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 15 hours of knowledge training on the approved areas of operation specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or.
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
 - (b) In addition, the course must include:
 - (1) Advanced Automation & Mode Management
 - (2) Advanced cross country performance planning; and
 - (3) High altitude multi-engine aerodynamics.
- 4. Flight training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 10 hours of flight training on the approved areas of operation specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or.

- (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
 - (b) In addition, the course must include:
 - (1) Management of automation, performance, and workload under realistic operational scenarios;
 - (2) Application of SOPs, profiles, and professional airmanship throughout; and
 - (3) Realistic emergency scenario training and experience.
- 5. Stage checks and end-of-course tests.** Each student must demonstrate commercial-level mastery of the areas of operation and professional standards of discipline and decision-making equivalent to those expected in multi-crew or corporate environments.

Appendix Q to Part 141—Airline Transport Pilot Certification Training Program (ATP CTP)

1. Applicability. This appendix prescribes the minimum curriculum requirements for an Airline Transport Pilot Certification Training Program (ATP CTP) conducted under this part. The course is designed to satisfy the training requirements of § 61.156 and to prepare applicants for the Airline Transport Pilot Airplane Multiengine knowledge test.

2. Eligibility for Enrollment.

(a) Each applicant must meet the enrollment prerequisites specified in the approved training course outline.

(b) A person may not be issued an ATP CTP graduation certificate unless that person meets the eligibility requirements of § 61.156 applicable to the Airline Transport Pilot Airplane Multiengine knowledge test.

3. Aeronautical Knowledge Training.

(a) Minimum Hours. Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved ATP CTP course must include at least 30 hours of academic instruction.

(b) Required Aeronautical Knowledge Areas. Ground training must include the knowledge areas specified in § 61.156(a), including:

(1) Aerodynamics (minimum 8 hours), including high-altitude operations;

(2) Meteorology (minimum 2 hours), including adverse weather phenomena and weather detection systems;

(3) Air carrier operations (minimum 14 hours), including at least:

(i) Physiology;

(ii) Communications;

(iii) Checklist philosophy;

(iv) Operational control;

(v) Minimum Equipment List/Configuration Deviation List concepts;

(vi) Ground operations;

(vii) Turbine engines;

(viii) Transport-category aircraft performance;

(ix) Automation, navigation, and flight path warning systems; and

(4) Leadership, professional development, crew resource management, and safety culture (minimum 6 hours).

4. Flight Simulation Training.

- (a) Minimum Hours. Each approved ATP CTP course must include:
 - (1) At least 10 hours of flight simulation training; and
 - (2) At least 6 of those hours must be conducted in a Level C or higher full flight simulator.
- (b) Authorized Training Devices. Training must be conducted in:
 - (1) A Level C or higher full flight simulator meeting § 141.41(a); and
 - (2) A full flight simulator or Flight Training Device qualified in accordance with 14 CFR part 60 and meeting § 141.41(a) for any remaining required simulator time.
- (c) Required Areas of Operation. Flight simulation training must include:
 - (1) Stall prevention and recovery;
 - (2) Upset prevention and recovery;
 - (3) High-altitude operations;
 - (4) Advanced automation management and mode awareness;
 - (5) Abnormal and emergency procedures; and
 - (6) Scenario-based exercises representative of transport-category aircraft operations.

5. Assessment and Completion Standards.

- (a) Each student must:
 - (1) Successfully complete all required academic instruction;
 - (2) Successfully complete all required flight simulation training; and
 - (3) Demonstrate satisfactory knowledge and participation as specified in the approved training course outline.
- (b) The certificate holder must verify that each applicant has completed:
 - (1) At least 30 hours of academic instruction; and
 - (2) At least 10 hours of flight simulation training, including at least 6 hours in a Level C or higher full flight simulator.
- (c) Upon satisfactory completion of the requirements of this appendix, the certificate holder must issue a graduation certificate in accordance with § 61.156.
- (d) Completion of the ATP CTP course and issuance of the graduation certificate renders the applicant eligible to take the Airline Transport Pilot Airplane Multiengine knowledge test in accordance with § 61.156.

6. Instructor Qualifications.

- (a) Each instructor providing academic or flight simulation training under this appendix must:
 - (1) Hold an Airline Transport Pilot certificate with an airplane multiengine class rating; and
 - (2) Have at least two years of air carrier experience as—
 - (i) Pilot-in-command in operations conducted under § 91.1053(a)(2)(i) or § 135.243(a)(1); or
 - (ii) Pilot-in-command or second in command in operations conducted under part 121; and
 - (3) Be qualified to instruct under the applicable operating part.
- (b) Instructors conducting flight simulation training must:
 - (1) Hold an appropriate airplane type rating for the airplane represented by the simulator;
 - (2) Have completed initial and recurrent training in the proper operation of the simulator or flight training device; and
 - (3) Be familiar with the data, limitations, and performance characteristics of the training device used.
- (c) Subject matter experts may provide instruction in specialized academic subjects provided that an instructor meeting paragraph (a) of this section is present and responsible for the conduct of the training.

Appendix R to Part 141—Enhanced Qualification Program (EQP) Phase I—ATP Preparation Course

1. Applicability. This appendix prescribes the minimum curriculum requirements for Phase I—ATP Preparation of an Enhanced Qualification Program (EQP) conducted under this part. Phase I is designed to provide advanced aeronautical knowledge and simulation training necessary for preparation for the Airline Transport Pilot certificate and progression to advanced transport-category aircraft training.

2. Eligibility for Enrollment and Screening.

(a) Certificate Requirements. A person must hold the following prior to enrolling in Phase I:

- (1) A commercial pilot certificate with airplane category and multiengine class rating; and
- (2) An instrument rating appropriate to the airplane multiengine category and class rating.

(b) Screening and Eligibility Assessment. Prior to enrollment, each candidate/applicant must satisfactorily complete a screening process designed to assess suitability for advanced ATP-level training. The screening process must evaluate the candidate/applicant in the following areas:

- (1) English Language Proficiency. The candidate/applicant must be able to read, speak, write, and understand the English language. The language proficiency assessment must evaluate the components listed in Appendix 1 to AC 60-28A, English Language Skill Standards Required by 14 CFR Parts 61, 63, and 65, consistent with Operational Level 4 of the ICAO Language Proficiency Rating Scale.
- (2) Cognitive Ability. The screening must assess the candidate's/applicant's ability to comprehend and respond to information provided aurally and visually, including evaluation of:
 - (i) Short-term memory;
 - (ii) Performance of mental calculations; and
 - (iii) Verbal and numerical reasoning.
- (3) Ability to Learn. The screening must establish the candidate's/applicant's ability to quickly, and with minimal repetition, comprehend and apply concepts presented during training.
- (4) Coordination and Spatial Ability. The screening must assess the candidate's/applicant's hand-eye coordination and spatial

awareness skills sufficient to manually control an aircraft to Airline Transport Pilot standards or successor publication.

(5) Judgment and Interpersonal Skills. The screening must assess the candidate's/applicant's judgment and interpersonal communication skills, including:

- (i) Integrity;
- (ii) Professionalism;
- (iii) Leadership;
- (iv) Resource management;
- (v) Communication;
- (vi) Innovation; and
- (vii) Mentoring capability.

3. Aeronautical Knowledge Training.

(a) Minimum Hours. Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved Phase I course must include not less than 180 hours of ground training.

(b) Required Aeronautical Knowledge Areas. Ground training must include instruction in the following areas:

- (1) Advanced aerodynamics, including high-speed and high-altitude effects;
- (2) Transport-category aircraft performance and limitations;
- (3) Advanced aircraft systems architecture and failure management;
- (4) Advanced automation management and autoflight systems;
- (5) High-altitude meteorology and operational weather decision-making;
- (6) Air carrier flight planning, dispatch coordination, and operational control principles;
- (7) Human factors, including fatigue science and threat and error management;
- (8) Safety management systems and data-driven safety analysis;
- (9) Regulatory requirements applicable to ATP-level and air carrier operations;
- (10) Professional judgment and structured operational risk assessment; and
- (11) Preparation for the Airline Transport Pilot Airplane Multiengine knowledge test.

4. Flight Training.

- (a) Minimum Hours. Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved Phase I course must include:
 - (1) Not less than 10 hours of flight simulation training; and
 - (2) At least 6 hours of that training must be conducted in a Level C or higher full flight simulator.
- (b) Authorized Training Devices. Training must be conducted in:
 - (1) A full flight simulator meeting § 141.41(a); or
 - (2) A Level 6 or Level 7 Flight Training Device meeting § 141.41(a), provided the minimum Level C or higher full flight simulator requirement specified in paragraph (a)(2) of this section is satisfied.
- (c) Required Areas of Operation. Flight simulation training must include instruction and evaluation in:
 - (1) Upset prevention and recovery at altitude;
 - (2) High-altitude aerodynamics and performance;
 - (3) Advanced automation management and mode awareness;
 - (4) Stall prevention and recovery;
 - (5) Advanced abnormal and emergency procedures; and
 - (6) Scenario-based operations representative of transport-category aircraft environments.
- (d) Enhanced Training. The minimum training specified in this section meets the requirements of § 61.156. Additional simulation training beyond the minimum required in paragraph (a) may be provided as part of the Enhanced Qualification Program at the discretion of the certificate holder, provided such training maintains an equivalent or greater level of safety and remains consistent with the approved training course outline.

5. Assessment and Completion Standards.

- (a) Each student must satisfactorily complete:
 - (1) A comprehensive knowledge examination;
 - (2) A competency-based flight evaluation; and
 - (3) A scenario-based operational evaluation.
- (b) Successful completion of Phase I must document that the applicant has met the knowledge and training requirements necessary to sit for the Airline Transport Pilot knowledge test.

6. Instructor Qualifications. Instructors conducting Phase I training must:

- (a) Hold an Airline Transport Pilot certificate with multiengine privileges;

- (b) Have documented experience in advanced multiengine or transport-category operations; and
- (c) Be trained and standardized in the approved EQP curriculum.

Appendix S to Part 141- Consensus Standard–Developed Training Courses

- 1. Applicability.** This appendix prescribes the requirements under which a consensus standards development organization may develop and submit training course standards for acceptance by the Administrator for use under this part. Training courses developed and accepted under this appendix may be implemented by pilot schools certificated under this part in lieu of prescriptive regulatory course requirements, provided an equivalent or greater level of safety is maintained.
- 2. Recognition of Consensus Standards Development Organization.**
 - (a) A consensus standards development organization seeking to develop training course standards under this appendix must:
 - (1) Operate under documented procedures ensuring openness, transparency, balance of interest, and due process;
 - (2) Include representation from industry, training providers, subject matter experts, and safety professionals;
 - (3) Maintain documented governance and revision control procedures; and
 - (4) Demonstrate independence from any single training provider.
 - (b) The Administrator must accept the organization prior to accepting standards developed under this appendix.
- 3. Development Requirements for Consensus-Developed Courses.** A training course developed under this appendix must include:
 - (a) Defined learning objectives and measurable performance standards;
 - (b) A competency-based structure identifying:
 - (1) Required knowledge elements;
 - (2) Required skill elements;
 - (3) Risk management elements; and
 - (4) Evaluation criteria;
 - (c) Defined minimum training hours or competency-based equivalency standards;
 - (d) Defined instructor qualification and standardization criteria;
 - (e) Defined stage assessment and end-of-course evaluation requirements;
 - (f) A safety risk assessment demonstrating that the proposed course maintains an equivalent or greater level of safety compared to prescriptive requirements under this part; and

- (g) A defined data collection and continuous improvement methodology.

4. Submission and Acceptance Process.

- (a) A consensus standards development organization must submit to the Administrator:
 - (1) The full course standard;
 - (2) Supporting documentation demonstrating equivalent or greater level of safety;
 - (3) A mapping to applicable Airman Certification Standards (ACS), where appropriate;
 - (4) Documentation of the development process; and
 - (5) A documented change-control process.
- (b) The Administrator will evaluate whether the proposed standard:
 - (1) Maintains an equivalent or greater level of safety;
 - (2) Is performance-based and measurable;
 - (3) Includes defined oversight mechanisms; and
 - (4) Integrates with Quality Management System principles under § 141.83.
- (c) Upon acceptance, the Administrator may issue a formal acceptance notice identifying the approved standard and any conditions or limitations.

5. Implementation by Pilot Schools.

- (a) A pilot school may implement a course developed under an accepted consensus standard upon:
 - (1) Incorporation into its approved training course outline; and
 - (2) Demonstration of compliance with its Quality Management System per § 141.83(b)(2).
- (b) Implementation of an accepted consensus-developed course does not require separate regulatory amendment, provided the school adheres to the accepted standard.

6. Revisions to Consensus Standards.

- (a) Revisions to an accepted consensus-developed course must follow the consensus standard organization's documented revision procedures.
- (b) Substantive revisions affecting safety, training hours, evaluation criteria, or required competencies must be submitted to the Administrator for acceptance prior to implementation.
- (c) Minor editorial revisions may be implemented without prior approval, provided they do not affect safety or performance standards.

7. Oversight and Withdrawal.

- (a) The Administrator retains authority to review accepted consensus standards at any time.
- (b) Acceptance may be suspended or withdrawn if the standard no longer maintains an equivalent or greater level of safety.

8. Equivalent Level of Safety. For purposes of this appendix, an equivalent or greater level of safety means that the consensus-developed course:

- (a) Achieves training outcomes equal to or exceeding those required under this part;
- (b) Includes objective performance measurement;
- (c) Incorporates structured evaluation; and
- (d) Demonstrates continuous improvement through data-driven oversight.

Redline Regulation

PART 141—PILOT SCHOOLS

Authority: 49 U.S.C. 106(f), 40113, 44701-44703, 44707, 44709, 44711, 45102-45103, 45301-45302.

Source: Docket 25910, 62 FR 16347, Apr. 4, 1997, unless otherwise noted.

Subpart A—General

§ 141.1 Applicability.

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety. This ~~this~~ part prescribes the requirements for issuing pilot school certificates, ~~provisional~~ certificates ~~registration~~, and associated ratings, and the general operating rules applicable to a holder of a certificate or rating issued under this part. Additional requirements for pilot schools seeking to provide training courses for powered-lift certification and ratings are set forth in part 194 of this chapter.
- (b) For the purpose of this part:

Airmen certification representative (ACR). An employee of a part 141 pilot school, who is appointed by the FAA to perform administrative certification functions. They act as a representative of the FAA Administrator to review graduation records and issue temporary airman certificates to students who have successfully completed a course at a school holding Examining Authority.

Aviation Training Device (ATD). A training device, other than a full flight simulator (FFS) or flight training device (FTD), that has been evaluated, qualified, and approved by the Administrator. In general, an ATD includes a replica of aircraft instruments, equipment, panels, and controls in an open flight deck area or an enclosed aircraft flight deck. It includes the hardware necessary to represent a category and class of aircraft (or set of aircraft) operations in ground and flight conditions having the appropriate range of capabilities and systems installed in the device.

Certificated pilot School. A part 141 pilot school applicant meeting the pertinent requirements of part 141 that has been issued an Air Agency Certificate.

Check instructor. A check instructor is authorized to conduct student stage checks, end-of-course tests, and proficiency checks.

Complex airplane. An airplane that has a retractable landing gear, flaps, and a controllable pitch propeller, including airplanes equipped with an engine control system consisting of a digital computer and associated accessories for controlling the engine and propeller, such as a full authority digital engine control; or, in the case of a seaplane, flaps and a controllable pitch propeller, including seaplanes equipped with an engine control system consisting of a digital computer and associated accessories for controlling the engine and propeller, such as a full authority digital engine control.

Cross-country time.

- (i) Except as provided in paragraphs (ii) through (vii) of this definition, time acquired during flight—
 - (A) Conducted by a person who holds a pilot certificate;
 - (B) Conducted in an aircraft;
 - (C) That includes a landing at a point other than the point of departure; and
 - (D) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems to navigate to the landing point.
- (ii) For the purpose of meeting the aeronautical experience requirements (except for a rotorcraft category rating), for a private pilot certificate (except for a powered parachute category rating), a commercial pilot certificate, or an instrument rating, time acquired during a flight—
 - (A) Conducted in an appropriate aircraft;
 - (B) That includes a point of landing that was at least a straight-line distance of more than 50 nautical miles from the original point of departure; and
 - (C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems to navigate to the landing point.
- (iii) For the purpose of meeting the aeronautical experience requirements for a sport pilot certificate (except for powered parachute privileges), time acquired during a flight conducted in an appropriate aircraft that—
 - (A) Includes a point of landing at least a straight line distance of more than 25 nautical miles from the original point of departure; and
 - (B) Involves, as applicable, the use of dead reckoning; pilotage; electronic navigation aids; radio aids; or other navigation systems to navigate to the landing point.
- (iv) For the purpose of meeting the aeronautical experience requirements for a sport pilot certificate with powered parachute privileges or a private pilot certificate with a powered parachute category rating, time acquired during a flight conducted in an appropriate aircraft that—

- (A) Includes a point of landing at least a straight line distance of more than 15 nautical miles from the original point of departure; and
 - (B) Involves, as applicable, the use of dead reckoning; pilotage; electronic navigation aids; radio aids; or other navigation systems to navigate to the landing point.
- (v) For the purpose of meeting the aeronautical experience requirements for any pilot certificate with a rotorcraft category rating or an instrument-helicopter rating, time acquired during a flight—
 - (A) Conducted in an appropriate aircraft;
 - (B) That includes a point of landing that was at least a straight-line distance of more than 25 nautical miles from the original point of departure; and
 - (C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems to navigate to the landing point.
- (vi) For the purpose of meeting the aeronautical experience requirements for an airline transport pilot certificate (except with a rotorcraft category rating), time acquired during a flight—
 - (A) Conducted in an appropriate aircraft;
 - (B) That is at least a straight-line distance of more than 50 nautical miles from the original point of departure; and
 - (C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems.

Enhanced Advanced Aviation Training Device (EAATD): A training device that meets the functional standards of an AATD while incorporating the physical and software architecture of a specific make and model of aircraft. While the device is designed to replicate the flight deck and performance characteristics of a specific airframe, it is qualified to provide training credit for the broader category and class of aircraft (e.g., Airplane Multi-Engine Land).

To be classified as an EAATD, the device must feature:

- i. Advanced Avionics Suite: A fully integrated, high-fidelity digital flight instrument system (e.g., G1000, Pro Line, or equivalent) with a stand-alone, updateable navigational database and dedicated hardware interface.
- ii. Physical Flight Deck: A semi-enclosed or fully enclosed cockpit shell with aircraft-specific physical switch consoles, power levers, and flight controls.
- iii. Immersive Visual Environment: A primary visual field provided by either a continuous wrap-around display system (minimum 210° horizontal by 40° vertical field of view) or a high-resolution VR/XR (Virtual/Extended Reality) system with 360° spherical tracking.

End-of-Course (EOC). The final stage check that is conducted by the chief flight instructor, assistant chief flight instructor, or stage check instructor for a specific course. This EOC will result in eligibility for a graduation certificate. If the school holds Examining Authority, successful compilation of the EOC results in certification.

Examining Authority. The authority grants the holder of a pilot school certificate the ability to conduct end-of-course (EOC) tests of its own students for the issuance of pilot certificates and ratings without further testing by the FAA.

Flight Training. That training, other than ground training, received from an authorized instructor in flight in an aircraft.

Flight training device (FTD). A replica of aircraft instruments, equipment, panels, and controls in an open flight deck area or an enclosed aircraft flight deck replica. It includes the equipment and computer programs necessary to represent aircraft (or set of aircraft) operations in ground and flight conditions having the full range of capabilities of the systems installed in the device as described in part 60 of this chapter and the qualification performance standard (QPS) for a specific FTD qualification level.

Flight Simulation Training Device (FSTD): A device used for aircraft flight training, testing, or checking that is a full flight simulator (FFS), a flight training device (FTD), or an aviation training device (ATD).

Graduation certificate. Issued to a student after all course requirements are met and the student has successfully passed the end-of-course (EOC) test. This certificate is used as proof of eligibility for the course or rating sought.

Ground training. That training, other than flight training, received from an authorized instructor.

Instrument training. That time in which instrument training is received from an authorized instructor under actual or simulated instrument conditions.

Knowledge test. A test on the aeronautical knowledge areas required for an airman certificate or rating that can be administered in written form or by a computer.

Pilot School Rating. A part 141 pilot school is issued a rating for each of its approved courses. A part 141 pilot school rating is not to be confused with an airman certification rating, such as an instrument rating.

Pilot Training Management Manual (PTMM). A manual required by for a part 141 certificated pilot school that consist entirely of non-course specific information regarding the pilot school. Content to be included in the PTMM includes, but is not limited to safety policies and procedures, facility descriptions, aircraft information, airport information, and resources available.

Primary Flight Instruction. Training provided in an aircraft to a student or pilot towards an initial certification, additional certification, or additional rating.

Professional Pilot Track Course. The Professional Pilot Track consists of four individual courses. A course within the Professional Pilot Track is a segment that results in a certificate or rating.

Proficiency check. A check that is conducted by the Chief Flight Instructor, Assistant Chief Flight Instructor, or check instructor to determine an instructor's eligibility to teach in an approved course or aircraft.

Registered Pilot School. A pilot school, other than a certificated pilot school, who has registered with the FAA and provided the required information.

Satellite Base. A location other than the main operations base where approved ground or flight training courses are conducted.

Stage check. A required progress check designed to ensure proficiency at the completion of a stage of training. This check will be conducted by the Chief Flight Instructor, Assistant Chief Flight Instructor, or check instructor of the pilot school.

Syllabus. An outline and summary of topics to be covered in a training course, textbooks, and other material used in the course. It is a step-by-step (building block) progression of learning with provision for regular review and evaluation at prescribed stages of learning. The syllabus defines the unit of training, states by objective what the student is expected to accomplish during the unit of training, shows an organized plan for instruction (building blocks, from the simple to the complex), and dictates an evaluation process for either the unit or stages of learning. A syllabus is contained within a training course outline (TCO).

Technically advanced airplane (TAA). An airplane equipped with an electronically advanced avionics system.

Trained on. A formal process that ensures an instructor is not only familiar with but is proficient in applying and teaching to a standardized level.

Training Course Outline (TCO). A document describing the content of a particular course through a statement of objectives, description of teaching aids, definition of evaluative criteria, and indication of desired outcomes.

Training time. Training received:

- (i) In flight from an authorized instructor;
- (ii) On the ground from an authorized instructor; or
- (iii) In a flight simulator or flight training device from an authorized instructor

XR. The umbrella term that encompasses all immersive technologies, specifically Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR).

[Docket FAA-2023-1275, Amdt. 141-26, 89 FR 92488, Nov. 21, 2024]

§ 141.3 Certificate required.

No person may operate as a certificated pilot school without, or in violation of, a pilot school certificate ~~or provisional pilot school certificate~~ issued under this part.

§ 141.5 Requirements for a pilot school certificate.

The FAA may issue a pilot school certificate with the appropriate ratings if, ~~within the 24 calendar months before the date application is made,~~ the applicant—

- (a) Completes the application for a pilot school certificate on the form and in the manner prescribed by the FAA;
- ~~(b) Has held a provisional pilot school certificate;~~
- ~~(eb)~~ Meets the applicable requirements under subparts A through C of this part for the pilot school certificate and associated ratings sought;
- ~~(d) Has established a pass rate of 80 percent or higher on the first attempt for all:~~
 - ~~(1) Knowledge tests leading to a certificate or rating;~~
 - ~~(2) Practical tests leading to a certificate or rating;~~
 - ~~(3) End-of-course tests for an approved training course specified in appendix K of this part; and~~
 - ~~(4) End-of-course tests for special curricula courses approved under § 141.57.~~
- ~~(e) Has graduated at least 10 different people from the school's approved training courses.~~
- (c) Maintains a Quality Management System (OMS) that:
 - (1) Meets the requirements of §141.83 of this part; or
 - (2) Is certified and in good standing with ISO 9001 (International Organization for Standardization), or AS9100-series Aerospace Quality Management Standards of the IAQG (International Aerospace Quality Group); or

(3) Demonstrates conformity with another internationally recognized quality management standard acceptable to the Administrator.

(d) Maintains a Safety Management System (SMS) that:

(1) Meets the requirements of §141.82 of this part; or

(2) Meets the requirements of 14 CFR part 5 and is accepted by the Administrator.

[Docket FAA-2006-26661, 74 FR 42563, Aug. 21, 2009, as amended by Amdt. 141-14, 75 FR 56858, Sept. 17, 2010; Docket FAA-2016-6142, Amdt. 141ndash;20, 83 FR 30283, June 27, 2018]

§ 141.7 Registered Provisional pilot school certificate.

~~An applicant that meets the applicable requirements of subparts A, B, and C of this part, but does not meet the recent training activity requirements of § 141.5(d) of this part, may be issued a provisional pilot school certificate with ratings.~~

(a) General. A registered pilot school is an entity that is registered with the FAA under this section to conduct pilot training under limited requirements. A registered pilot school is not certificated under 14 CFR part 141 and does not hold the privileges of a certificated pilot school.

(b) Required Information. To maintain registered status under this section, a registered pilot school must provide and maintain the following information in a form acceptable to the Administrator:

1. The name and contact information of the designated point of contact for the pilot school;
2. The name of the registered pilot school;
3. The primary training location, and any auxiliary training sites;
4. The description and number of each aircraft type used for pilot training;
5. A statement indicating whether the school intends to pursue part 141 pilot school certification in the future;
6. A statement declaring that aircraft used for training will be airworthy and maintained in accordance with applicable regulations; and
7. A list of certificates and ratings that are offered.

(c) Personnel.

1. A registered pilot school must have a designated point of contact. The registered pilot school is not required to designate or employ a chief instructor or assistant chief instructor.
2. All flight instruction provided by a registered pilot school must be conducted by a certificated flight instructor who hold the appropriate ratings to provide the training given.
3. A registered pilot school is not required to maintain personnel records.
 - i. Individual flight instructors must keep records in accordance with §61.189.

(d) Training Courses. A registered pilot school is not required to develop, submit, or use a training course that meets the requirements of Subpart C of this part. The requirements provided under paragraph (b)(7) constitutes the sole training documentation required for registered status.

(e) Privileges and Limitations.

1. A registered pilot school may conduct pilot training within the scope of its general course outline, provided the training meets the applicable aeronautical experience, training, and proficiency requirements of part 61.
2. A registered pilot school may not hold examining authority under §141.63.
3. A registered pilot school may represent itself to the public only as an “FAA-registered pilot school” and may not use the term “FAA-certified”, “FAA-approved”, or any representation implying certification under part 141.
4. A registered pilot school may not advertise or imply that it holds any of the privileges associated with certificated pilot schools, including special curriculum authority or examining authority.

(f) Oversight. FAA oversight of a registered pilot school is limited to reviewing:

1. Aircraft used for training remain airworthy;
2. Flight instruction is provided by properly certificated flight instructors;
3. The school operates within the scope and limitations of this section; and
4. The school does not represent itself as an FAA-certificated pilot school.

(g) Duration and Continuing Eligibility. A registered pilot school status does not expire; however, each registered pilot school must, at least once every 12 calendar months, submit a self-declaration in a form and manner acceptable to the Administrator affirming that the school continues to meet the requirements of this section. Failure to submit the annual self-declaration, or failure to continue meeting the requirements of this section, may result in revocation of registered pilot school status.

(h) Basic Quality and Safety Practices. A registered pilot school must implement the following minimum quality and safety practices:

1. Quality Practices
 - i. Documentation of student training issues/trends identified during instruction and the corrective actions taken.
 - ii. A brief, documented self-review conducted at least every twelve months evaluating training effectiveness and noting any changes/improvements made.
2. Safety Practices
 - i. A list of known or newly identified hazards associated with the school’s operations.
 - ii. A basic preflight risk assessment process must be used for each training flight.
 - iii. Documentation of safety concerns, accidents, incidents, or hazards and the steps taken to mitigate occurrence or recurrence.

§ 141.9 Examining authority privileges.

- a. The FAA shall issues the privilege of examining authority to a pilot school for a training course listed in 141.11 of this section, including combined appendices, if:
 1. ~~T~~the pilot school and its training course meet the requirements of subpart D of this part.
 2. The pilot school maintains an FAA-accepted Quality Management System (QMS) in accordance with §141.83(b)(2).
- b. A pilot school that no longer maintains a Quality Management System meeting the requirements of § 141.83(b)(2) is not eligible to continue exercising examining authority privileges. In such cases, the FAA may limit, suspend, or terminate examining authority privileges, in whole or in part, until the pilot school demonstrates compliance with paragraph (a) of this section.
- c. The FAA may restore examining authority privileges when the pilot school demonstrates that it meets the requirements of paragraph (a) of this section.
- d. The FAA retains the authority to modify, limit, suspend, or terminate examining authority privileges at any time if the FAA determines that the pilot school's level of compliance, internal controls, or quality system effectiveness no longer supports the continued exercise of examining authority.

[Docket FAA-2006-26661, 74 FR 42563, Aug. 21, 2009]

§ 141.11 Pilot school ratings.

- (a) The ratings listed in paragraph (b) of this section may be issued ~~to an applicant for:~~
~~(1) A to-a~~ pilot school certificate, provided the applicant meets the requirements of § 141.5 of this part; ~~or~~
~~(2) A provisional pilot school certificate, provided the applicant meets the requirements of § 141.7 of this part.~~
- (b) An ~~applicant~~ pilot school may be authorized to conduct the following courses:
 - (1) **Certification and rating courses.** (Appendixes A through ~~HL~~).
 - (i) Sport Pilot Course
 - ~~(i) Recreational pilot course.~~
 - (ii) Private pilot course.
 - (iii) ~~Commercial pilot course.~~ Instrument rating course.
 - (iv) ~~Instrument rating course.~~ Commercial pilot course
 - (v) Airline transport pilot course.
 - (vi) Flight instructor course.
 - (vii) Additional Flight Instructor class rating course
 - ~~(viii)~~ Flight instructor instrument course.
 - ~~(viii)~~ Ground instructor course.
 - (ix) Additional aircraft category or class rating course.

- (xi) Aircraft type rating course.
- (2) ***Special preparation courses.*** (Appendix ~~K~~M).
 - (i) Pilot refresher course.
 - (ii) Flight instructor refresher course.
 - (iii) Ground instructor refresher course.
 - (iv) Agricultural aircraft operations course.
 - (v) Rotorcraft external-load operations course.
 - (vi) Special operations course.
 - (vii) Test pilot course.
 - ~~(viii) Airline transport pilot certification training program.~~
 - (ix) Flight instructor enhanced qualification training program.
- (3) ***Pilot ground school course.*** (Appendix ~~L~~N).
- (4) ***Combined private pilot certification and instrument rating course.*** (Appendix ~~MO~~O).
- (5) Professional pilot track (Appendix P)
- (6) Airline transport pilot certificate training program (Appendix Q)
- (7) Airline transport pilot enhanced qualification program (EQP) Phase 1 (Appendix R)
- (8) Consensus standard-based courses. (Appendix S).
- (c) Combination of certification and rating course appendices.**
 - (1) Notwithstanding the individual course requirements specified in Appendixes A through R of this part, a pilot school may request approval to combine two or more certification or rating courses listed in paragraph (b)(1) of this section into a single integrated course, provided the combined course:
 - (i) Meets the scope, objectives, and minimum performance standards of each appendix applicable to the certifications or ratings sought;
 - (ii) Ensures that all required ground and flight training elements for each included certification or rating remain identifiable, trackable, and subject to the school's approved quality management system; and
 - (iii) Provides a training syllabus that clearly shows the order of instruction, method of integration, and how the combined structure maintains or improves training effectiveness.
 - (2) The FAA Administrator may approve a combined course upon determining that the integration:
 - (i) Provides an equivalent or higher level of safety, training quality, and proficiency compared to conducting each course separately;
 - (ii) Does not reduce required training hours or completion standards unless expressly authorized by the corresponding appendix; and

- (iii) Enables the school to demonstrate continuing compliance with §§ 141.55, 141.63, and 141.101, as applicable.
- (3) A pilot school conducting a combined course under this paragraph must maintain training records that identify a student's progress toward each individual certification or rating included within the integrated curriculum;
- (4) Nothing in this paragraph permits the combination of courses or appendices outside those listed in § 141.11(b)(1), except as otherwise authorized in this part; and
- (5) A pilot school conducting a combined course under this paragraph must meet and maintain the Quality Management System requirements of § 141.83(b)(2), as demonstrated by documented evidence that the system is implemented, monitored, reviewed, and effective in practice
- (d) Reduced-Time Authority for Certification and Rating Courses
 - (1) Notwithstanding the minimum ground and flight training time requirements specified in Appendixes A through R of this part, a pilot school may request approval to conduct a certification or rating course with reduced total training time, provided the school qualifies for and maintains examining authority in accordance with § 141.55(e).
 - (2) Reduced-time authority under this paragraph applies only to the total training time specified in the applicable appendix. Required subject areas, training elements, stage checks, end-of-course evaluations, and performance standards must not be eliminated or substantively altered unless expressly authorized in the corresponding appendix.
 - (3) The Administrator may approve reduced-time authority upon determining that the school:
 - (i) Meets and continues to meet the requirements of § 141.55(e);
 - (ii) Demonstrates through its approved quality management system that student performance, proficiency, and safety outcomes are equivalent to or exceed those achieved under the minimum time requirements of the applicable appendix; and
 - (iii) Maintains compliance with § 141.83(b)(2).
 - (4) A pilot school operating under reduced-time authority must maintain training records that clearly identify student progress and completion within the reduced-time structure and must demonstrate ongoing monitoring, internal review, and corrective action through its approved quality management system.
 - (5) Reduced-time authority may be suspended or revoked if the Administrator determines that the school no longer satisfies § 141.55(e), fails to maintain an effective quality management system under § 141.83(b)(2), or demonstrates a decline in student performance, proficiency, or safety outcomes.

[Docket 25910, 62 FR 16347, Apr. 4, 1997, as amended by Amdt. 141-17, 78 FR 42379, July 15, 2013; Amdt. 141-17A, 78 FR 53026, Aug. 28, 2013; Docket FAA-2023-0825, Amdt. 141-25, 89 FR 80054, Oct. 1, 2024]

§ 141.13 Application for issuance, ~~or~~ amendment, ~~or~~ renewal.

(a) Application for an original certificate and rating, or an additional rating, ~~or the renewal of a certificate~~ under this part must be made on a form and in a manner prescribed by the Administrator.

(b) Application for the issuance or amendment of a certificate or rating must be ~~accompanied by two copies of each proposed training course curriculum for which approval is sought~~ submitted in a form and manner acceptable to the administrator.

§ 141.17 Duration of certificate ~~and~~ examining authority.

(a) Unless surrendered, suspended, or revoked, a pilot school's certificate ~~or a provisional pilot school's certificate~~ expires:

~~(1) On the last day of the 24th calendar month from the month the certificate was issued;~~

~~(2)~~ Except as provided in paragraph (b) of this section, on the date that any change in ownership of the school occurs;

~~(3) On the date of any change in the facilities upon which the school's certificate is based occurs;~~ or

~~(4)~~2 Upon notice by the Administrator that the school has failed ~~for more than 60 days to maintain the facilities, aircraft, or personnel required for any one of the school's approved training courses.~~ to meet the requirements listed under 141.5.

(b) A change in the ownership of a pilot school ~~or provisional pilot school~~ does not terminate that school's certificate if, within 30 days after the date that any change in ownership of the school occurs:

(1) Application is made for an appropriate amendment to the certificate; and

(2) No change in the Quality Management System (QMS), Safety Management System (SMS), facilities, ~~personnel,~~ or approved training courses is involved.

~~(c) An examining authority issued to the holder of a pilot school certificate expires on the date that the pilot school certificate expires, or is surrendered, suspended, or revoked.~~

§ 141.18 Carriage of narcotic drugs, marijuana, and depressant or stimulant drugs or substances.

If the holder of a certificate issued under this part permits any aircraft owned or leased by that holder to be engaged in any operation that the certificate holder knows to be in

violation of § 91.19(a) of this chapter, that operation is a basis for suspending or revoking the certificate.

§ 141.19 Display of certificate.

- (a) Each holder of a pilot school certificate ~~or a provisional pilot school certificate~~ must display that certificate in a place in the school that is normally accessible to the public and is not obscured.
- (b) A certificate must be made available for inspection upon request by:
- (1) The Administrator;
 - (2) An authorized representative of the National Transportation Safety Board; or
 - (3) A Federal, State, or local law enforcement officer.

§ 141.21 Inspections.

Each holder of a certificate issued under this part must allow the Administrator to inspect its personnel, facilities, equipment, and records to determine the certificate holder's:

- (a) Eligibility to hold its certificate in accordance with the requirements set forth in § 141.5;
- ~~(b) Compliance with 49 U.S.C. 40101 et seq., formerly the Federal Aviation Act of 1958, as amended; and~~
- ~~(c) Compliance with the Federal Aviation Regulations.~~
- ~~(c) Inspections will be managed and conducted by the FAA part 141 Central Management Office (CMO). The Central Management Office (CMO) may:~~
1. Inspect a pilot school using electronic means when possible; and/or
 2. Delegate site inspections to a local FSDO.
 - a. Delegated site inspections must be completed within 30 days of request.

§ 141.23 Advertising limitations.

- (a) The holder of a pilot school certificate ~~or a provisional pilot school certificate~~ may not make any statement relating to its certification and ratings that is false or designed to mislead any person contemplating enrollment in that school.
- (b) The holder of a pilot school certificate ~~or a provisional pilot school certificate~~ may not advertise that the school is certificated unless it clearly differentiates between courses that have been approved under part 141 of this chapter and those that have not been approved under part 141 of this chapter.
- (c) The holder of a pilot school certificate ~~or a provisional pilot school certificate~~ must promptly remove:
- (1) From vacated premises, all signs indicating that the school was certificated by the Administrator; or
 - (2) All indications (including signs), wherever located, that the school is certificated by the Administrator when its certificate has ~~expired or has been~~ surrendered, suspended, or revoked.

(d) A registered pilot school must comply with the advertising and representation limitations prescribed in § 141.7(e)(3) and (4), including restrictions on the use of terms, descriptions, or representations that imply FAA certification or approval beyond that authorized by registration.

§ 141.25 Business office and operations base.

(a) Each holder of a pilot school ~~or a provisional pilot school~~ certificate must maintain a principal business office with a mailing address in the name shown on its certificate.

(b) The facilities and equipment at the principal business office must be adequate to maintain the files and records required to operate the business of the school.

(c) ~~The principal business office may not be shared with, or used by, another pilot school.~~ A certificated pilot school may share business or administrative office facilities with another certificated pilot school operating under this part, provided that each pilot school:

(1) Retains independent management authority and responsibility for its operations; and

(2) Ensures that all student records and records required by this part remain under the exclusive control of the certificate holder, with safeguards in place to prevent unauthorized access.

(d) Before changing the location of the principal business office or the operations base, each certificate holder must notify the ~~responsible Flight Standards office for the area of the new location~~ FAA 141 Central Management Office (CMO), and the notice must be:

(1) Submitted ~~in writing to the administrator~~ at least 30 days before the change of location; and

(2) Accompanied by any amendments needed for the certificate holder's approved ~~training course outline~~ Pilot Training Management Manual (PTMM).

(e) A certificate holder may conduct training at an operations base other than the one specified in its certificate, if:

(1) The Administrator has ~~inspected and~~ approved the base for use by the certificate holder; and

(2) The ~~course of training~~ Pilot Training Management Manual (PTMM) and any needed amendments have been ~~approved~~ provided to the Administrator for use at that base.

[Docket 25910, 62 FR 16347, Apr. 4, 1997, as amended by Docket FAA-2018-0119, Amdt. 141-19, 83 FR 9175, Mar. 5, 2018]

§ 141.26 Training agreements.

(a) A training center certificated under part 142 of this chapter may provide the training, testing, and checking for pilot schools certificated under this part and is considered to meet the requirements of this part, provided—

- (1) There is a training agreement between the certificated training center and the pilot school;
- (2) The training, testing, and checking provided by the certificated training center is approved and conducted under part 142;
- (3) The pilot school certificated under this part obtains the Administrator's approval for a training course outline that includes the training, testing, and checking to be conducted under this part and the training, testing, and checking to be conducted under part 142; and
- (4) Upon completion of the training, testing, and checking conducted under part 142, a copy of each student's training record is forwarded to the part 141 school and becomes part of the student's permanent training record.

~~(b) An institution of higher education that holds a pilot school certificate under this part and a letter of authorization issued under § 61.169 of this chapter may outsource the flight training required by § 61.169 to another pilot school certificated under this part, provided a training agreement is in place. The institution of higher education must conduct the required ground training under its pilot school certificate issued under this part, and the pilot school providing flight training must conduct that training under this part in accordance with its approved training course. A pilot school that provides flight training for an institution of higher education that holds a letter of authorization under § 61.169 of this chapter must have a training agreement with that institution of higher education.~~

[Docket FAA-2010-0100, 78 FR 42379, July 15, 2013]

~~§ 141.27 Renewal of certificates and ratings.~~

~~(a) Pilot school.~~

- ~~(1) A pilot school may apply for renewal of its school certificate and ratings within 30 days preceding the month the pilot school's certificate expires, provided the school meets the requirements prescribed in paragraph (a)(2) of this section for renewal of its certificate and ratings.~~
- ~~(2) A pilot school may have its school certificate and ratings renewed for an additional 24 calendar months if the Administrator determines the school's personnel, aircraft, facility and airport, approved training courses, training records, and recent training ability and quality meet the requirements of this part.~~
- ~~(3) A pilot school that does not meet the renewal requirements in paragraph (a)(2) of this section, may apply for a provisional pilot school certificate if the school meets the requirements of § 141.7 of this part.~~

~~(b) Provisional pilot school.~~

- ~~(1) Except as provided in paragraph (b)(3) of this section, a provisional pilot school may not have its provisional pilot school certificate or the ratings on that certificate renewed.~~

~~(2) A provisional pilot school may apply for a pilot school certificate and associated ratings provided that school meets the requirements of § 141.5 of this part.~~

~~(3) A former provisional pilot school may apply for another provisional pilot school certificate, provided 180 days have elapsed since its last provisional pilot school certificate expired.~~

§ 141.29 [Reserved]

Subpart B—Personnel, Aircraft, ~~—~~ and Facilities Requirements

§ 141.31 Applicability.

(a) ~~Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety. This~~ this subpart prescribes:

(1) The personnel and aircraft requirements for a pilot school certificate ~~or a provisional pilot school certificate~~; and

(2) The facilities that a pilot school ~~or provisional pilot school~~ must have available on a continuous basis.

(b) As used in this subpart, to have continuous use of a facility, ~~including an airport~~, the school must have:

~~(1) ownership, or a written, legally binding agreement (including a lease) granting the pilot school the right to use the facility effective at the time the certificate is issued. Ownership of the facility or airport for at least 6 calendar months after the date the application for initial certification and on the date of renewal of the school's certificate is made; or~~

~~(2) A written lease agreement for the facility or airport for at least 6 calendar months after the date the application for initial certification and on the date of renewal of the school's certificate is made.~~

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40907, July 30, 1997]

§ 141.33 Personnel.

(a) ~~An applicant for a pilot school certificate or for a provisional pilot school certificate~~ must meet the following personnel requirements:

(1) ~~Except as provided in paragraph 4 of this section, e~~Each ~~applicant pilot school~~ must have adequate personnel, including certificated flight instructors, certificated ground instructors, or holders of a commercial pilot certificate with a lighter-than-air rating, and a chief instructor for each approved course of training who is qualified and competent to perform the duties to which that instructor is assigned.

(2) If the school employs dispatchers, aircraft handlers, and line and service personnel, then it must instruct those persons in the procedures and responsibilities of their employment.

- (3) ~~Except as provided in paragraph 4 of this section, e~~Each instructor to be used for ground or flight training must hold a flight instructor certificate, ground instructor certificate, or commercial pilot certificate with a lighter-than-air rating, as appropriate, with ratings for the approved course of training and any aircraft used in that course.
- (4) ~~In addition to meeting the requirements of paragraph (a)(3) of this section, e~~Each instructor used for the airline transport pilot certification training program in § 61.156 of this chapter or an airline transport pilot enhanced qualification program under this part must:
- (i) Hold a flight instructor certificate, ground instructor certificate with ratings for the approved course of training, or complete at least 8 hours of ground training and satisfactorily complete a written test on the following subject matter:
 - (A) Instruction methods and techniques.
 - (B) Training policies and procedures.
 - (C) The fundamental principles of the learning process.
 - (D) Instructor duties, privileges, responsibilities, and limitations.
 - (ii) Hold an airline transport pilot certificate with an airplane category multiengine class rating;
 - (iii) Have at least 2 years of experience as a pilot-in-command in operations conducted under § 91.1053(a)(2)(i) or § 135.243(a)(1) of this chapter, or as a pilot-in-command or second in command in any operation conducted under part 121 of this chapter; and
 - (iv) If providing training in a flight simulation training device, have received training and evaluation within the preceding 12 months from the certificate holder on—
 - (A) Proper operation of flight simulator and flight training device controls and systems;
 - (B) Proper operation of environmental and fault panels,
 - (C) Data and motion limitations of simulation;
 - (D) Minimum equipment requirements for each curriculum; and
 - (E) The maneuvers that will be demonstrated in the flight simulation training device.
- (b) ~~An applicant for a pilot school certificate or for a provisional pilot school certificate~~ must designate a chief instructor for each of the school's approved training courses, who must meet the requirements of § 141.35 of this part.
- (c) When necessary, ~~an applicant for a pilot school certificate or for a provisional pilot school certificate~~ may designate a person to be an assistant chief instructor for an approved training course, provided that person meets the requirements of § 141.36 of this part.

(d) A pilot school ~~and a provisional pilot school~~ may designate a person to be a check instructor for conducting student stage checks, end-of-course tests, and instructor proficiency checks, provided:

~~(1) That that person meets the requirements of § 141.37 of this part, and~~

~~(2) The school has an enrollment of at least 10 students at the time designation is sought.~~

(e) A person, as listed in this section, may serve in more than one position for a school, provided that person is qualified for each position.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40907, July 30, 1997; Amdt. 141-12, 74 FR 42563, Aug. 21, 2009; Amdt. 141-17, 78 FR 42379, July 15, 2013; Amdt. 141-17A, 78 FR 53026, Aug. 28, 2013]

§ 141.34 ~~Employment of former FAA employees~~ Conflict of Interest.

(a) ~~Except as specified in paragraph (c) of this section, n~~No holder of a pilot school certificate ~~or a provisional pilot school certificate~~ may knowingly employ or make a contractual arrangement which permits an individual to act as an agent or representative of the certificate holder in any matter before the Federal Aviation Administration if the individual, in the preceding 2 years—

(1) Served as, or was directly responsible for the oversight of, a Flight Standards Service aviation safety inspector; and

(2) Had direct responsibility to inspect, or oversee the inspection of, the operations of the certificate holder.

(b) For the purpose of this section, an individual shall be considered to be acting as an agent or representative of a certificate holder in a matter before the agency if the individual makes any written or oral communication on behalf of the certificate holder to the agency (or any of its officers or employees) in connection with a particular matter, whether or not involving a specific party and without regard to whether the individual has participated in, or had responsibility for, the particular matter while serving as a Flight Standards Service aviation safety inspector.

~~(c) An individual may not serve as an FAA inspector or otherwise exercise direct regulatory oversight of a pilot school if that individual has been employed by, or served as a contractor or consultant to, that pilot school, in a manner that presents an actual or apparent conflict of interest. The provisions of this section do not prohibit a holder of a pilot school certificate or a provisional pilot school certificate from knowingly employing or making a contractual arrangement which permits an individual to act as an agent or representative of the certificate holder in any matter before the Federal Aviation Administration if the individual was employed by the certificate holder before October 21, 2011.~~

1. A pilot school that believes an actual or apparent conflict of interest exists with respect to its assigned FAA oversight may submit a written request for review to the FAA office responsible for oversight of the pilot school.

~~[Docket FAA-2008-1154, 76 FR 52236, Aug. 22, 2011]~~

§ 141.35 Chief instructor qualifications.

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, ~~t~~To be eligible for designation as a chief instructor for a course of training, a person must meet the following requirements:

- (1) Hold a commercial pilot certificate or an airline transport pilot certificate, and, except for a chief instructor for a course of training ~~solely~~ for a lighter-than-air rating, the Airline Transport Pilot Certification Training Program, and the Airline Transport Pilot Enhanced Qualification Program, a current flight instructor certificate. The certificates must contain the appropriate aircraft category and class ratings for the category and class of aircraft used in the course and an instrument rating, if an instrument rating is required for enrollment in the course of training;
 - (2) Meet the pilot-in-command recent flight experience requirements of § 61.57 of this chapter;
 - (3) Pass a knowledge test on—
 - (i) Teaching methods;
 - (ii) Applicable provisions of the “Aeronautical Information Manual”;
 - (iii) Applicable provisions of parts 61, 91, and 141 of this chapter; and
 - (iv) The objectives and approved course completion standards of the course for which the person seeks to obtain designation.
 - (4) Pass a proficiency test on instructional skills and ability to train students on the flight procedures and maneuvers appropriate to the course;
 - (5) Except for a course of training for gliders, balloons, or airships, the chief instructor must meet the applicable requirements in paragraphs (b), (c), ~~and (d), and~~ (e) of this section; and
 - (6) A chief instructor for a course of training for gliders, balloons or airships is only required to have 40 percent of the hours required in paragraphs (b) and ~~(d)~~ of this section.
- (b) For a course of training leading to the issuance of a sport~~recreational~~ or private pilot certificate or rating, a chief instructor must have:
- (1) At least 1,000 hours as pilot-in-command; and
 - (2) Primary flight training experience, acquired as either a certificated flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least—
 - (i) 2 years and a total of 500 flight hours; or
 - (ii) 1,000 flight hours.

(c) For a course of training leading to the issuance of an instrument rating or a rating with instrument privileges, a chief instructor must have:

- (1) At least 100 hours of flight time under actual or simulated instrument conditions;
- (2) At least 1,000 hours as pilot-in-command; and
- (3) Instrument flight instructor experience, acquired as either a certificated flight instructor-instrument or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least—
 - (i) 2 years and a total of 250 flight hours; or
 - (ii) 400 flight hours.

(d) For an Airline Transport Pilot Certification Training Program (ATP CTP) course or Airline Transport Pilot Enhanced Qualification Program (EQP) course, a Chief Pilot must have:

- (1) An airline transport pilot certificate with appropriate category and class ratings;
- (2) Operational leadership experience acceptable to the Administrator, acquired while serving as a Chief Pilot, Assistant Chief Pilot, Director of Operations, Training Captain, Check Airman, or equivalent position, in operations conducted under 14 CFR part 121, part 135, or part 91K; or flight training experience, acquired as either a certificated flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least 3,000 hours of total flight time, including at least 1,500 hours as pilot-in-command.
- (3) 2 years of experience as a pilot-in-command in operations conducted under § 91.1053(a)(2)(i) or § 135.243(a)(1) of this chapter, or as a pilot-in-command or second in command in any operation conducted under part 121 of this chapter

~~(e)~~ For a course of training other than an Airline Transport Pilot Certification Training Program (ATP CTP), an Airline Transport Pilot Enhanced Qualification Program (EQP), or one-a course leading to the issuance of a ~~recreational sport~~ or private pilot certificate or rating, or an instrument rating or a rating with instrument privileges, a chief instructor must have:

- (1) At least 2,000 hours as pilot-in-command; and
- (2) Flight training experience, acquired as either a certificated flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least—
 - (i) 3 years and a total of 1,000 flight hours; or
 - (ii) 1,500 flight hours.

~~(f)~~ To be eligible for designation as chief instructor for a ground school course, a person must have 1 year of experience as a ground school instructor at a certificated pilot school.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40907, July 30, 1997, as amended by Amdt. 141-10, 63 FR 20289, Apr. 23, 1998]

§ 141.36 Assistant chief instructor qualifications.

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, tTo be eligible for designation as an assistant chief instructor for a course of training, a person must meet the following requirements:

- (1) Hold a commercial pilot or an airline transport pilot certificate and, except for the assistant chief instructor for a course of training solely for a lighter-than-air rating, a current flight instructor certificate. The certificates must contain the appropriate aircraft category, class, and instrument ratings if an instrument rating is required by the course of training for the category and class of aircraft used in the course;
 - (2) Meet the pilot-in-command recent flight experience requirements of § 61.57 of this chapter;
 - (3) Pass a knowledge test on—
 - (i) Teaching methods;
 - (ii) Applicable provisions of the “Aeronautical Information Manual”;
 - (iii) Applicable provisions of parts 61, 91, and 141 of this chapter; and
 - (iv) The objectives and approved course completion standards of the course for which the person seeks to obtain designation.
 - (4) Pass a proficiency test on the flight procedures and maneuvers appropriate to that course; and
 - (5) Meet the applicable requirements in paragraphs (b), (c), and (d) of this section. However, an assistant chief instructor for a course of training for gliders, balloons, or airships is only required to have 40 percent of the hours required in paragraphs (b) and (d) of this section.
- (b) For a course of training leading to the issuance of a ~~recreational~~ sport or private pilot certificate or rating, an assistant chief instructor must have:
- (1) At least 500 hours as pilot-in-command; and
 - (2) Flight training experience, acquired as either a certificated flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least—
 - (i) 1 year and a total of 250 flight hours; or
 - (ii) 500 flight hours.
- (c) For a course of training leading to the issuance of an instrument rating or a rating with instrument privileges, an assistant chief flight instructor must have:
- (1) At least 50 hours of flight time under actual or simulated instrument conditions;
 - (2) At least 500 hours as pilot-in-command; and
 - (3) Instrument flight instructor experience, acquired as either a certificated flight instructor-instrument or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least—
 - (i) 1 year and a total of 125 flight hours; or
 - (ii) 200 flight hours.

(d) For a course of training other than one leading to the issuance of a sport~~recreational~~ or private pilot certificate or rating, or an instrument rating or a rating with instrument privileges, an assistant chief instructor must have:

- (1) At least 1,000 hours as pilot-in-command; and
- (2) Flight training experience, acquired as either a certificated flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least—
 - (i) 1 1/2 years and a total of 500 flight hours; or
 - (ii) 750 flight hours.

(e) To be eligible for designation as an assistant chief instructor for a ground school course, a person must have 6 months of experience as a ground school instructor at a certificated pilot school.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40907, July 30, 1997, as amended by Amdt. 141-10, 63 FR 20289, Apr. 23, 1998]

§ 141.37 Check instructor qualifications.

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, a pilot school must develop a check instructor training syllabus and shall~~To be~~ designated ~~as~~ a check instructor ~~for to~~ conducting student stage checks, end-of-course tests, and instructor proficiency checks under this part, ~~a if the~~ person ~~must~~ meets the training and eligibility requirements of this section.

(b) A pilot school must develop and use an approved syllabus to provide training for check instructors to conduct and maintain currency for end-of-course checks, stage checks within a course of training, and instructor proficiency checks. This syllabus must include the following training:

(1) Initial check instructor training must include training on a specific stage check, end-of-course check and instructor proficiency check:

- (i) Expectations, authority, and limitations of the check instructor, including scope of evaluation and prohibitions on instruction during checks;
- (ii) Professionalism, impartiality, and ethics;
- (iii) Evaluating eligibility of the applicant;
- (iv) Review of the content and requirements for the appropriate stage check, end-of-course test, or instructor proficiency check.;
- (v) Review of the Airmen Certification Standards (ACS) requirements and standards as appropriate;
- (vi) Review of a sample plan of action for the check;
- (vii) Standardized and objective assessment and evaluation techniques;
- (viii) Managing test outcomes and discrepancies;
- (ix) Constructive debriefing and remediation techniques; and
- (x) Documentation and record keeping

- (2) Training required to be authorized to conduct an additional stage check, end-of-course test, or instructor proficiency check must include:
- (i) Evaluating eligibility of the applicant/student;
 - (ii) Review of the content and requirements for the appropriate stage check, end-of-course test, or instructor proficiency check;
 - (iii) Review of the ACS requirements and standards as appropriate;
 - (iv) Review of a sample plan of action for the check; and
 - (v) Documentation and record keeping.
- (3) Recurrency training required to maintain privileges to conduct stage checks, end-of-course tests, or instructor proficiency checks must include:
- (i) Review of professionalism, impartiality, and ethics;
 - (ii) Review of standardized assessment and evaluation techniques;
 - (iii) Review constructive debriefing and remediation techniques;
 - (iv) Changes and updates to the Airmen Certification Standards, pilot school syllabi, and any other document or manual;
 - (v) Review of documentation and record keeping;
 - (vi) Other areas deemed necessary by the chief instructor;
 - (vii) Additional training for check instructors authorized to conduct end-of-course tests:
 - (A) Review of expectations and limitations of the end-of-course check instructor;
 - (B) Review of the end-of-course test content, requirements, and Airmen Certification Standards requirements; and
 - (C) Review of managing test outcomes and discrepancies;
- ~~(1c)~~ For checks and tests that relate to either flight or ground training, the person must pass a test, given by the chief instructor, ~~or assistant chief instructor~~ on—
- ~~(i1)~~ ~~Teaching methods;~~ Applicable tasks listed in paragraph b of this part;
 - ~~(ii2)~~ Applicable provisions of the “Aeronautical Information Manual”;
 - ~~(iii3)~~ Applicable provisions of parts 61, 91, and 141 of this chapter; and
 - ~~(iv4)~~ The objectives and course completion standards of the approved training course for the designation sought.
- ~~(2d)~~ For checks and tests that relate to a flight training course, the person must—
- ~~(1i)~~ Meet the requirements in paragraph ~~(ac)(4)~~ of this section;
 - ~~(2ii)~~ Hold a commercial pilot certificate or an airline transport pilot certificate and, except for a check instructor for a course of training for a lighter-than-air rating, a current flight instructor certificate. The certificates must contain the appropriate aircraft category, class, and instrument ratings for the category and class of aircraft used in the course;
 - ~~(3iii)~~ Meet the pilot-in-command recent flight experience requirements of § 61.57 of this chapter; and

~~(4iv)~~ Pass a proficiency test, given by the chief instructor or assistant chief instructor, on the flight procedures and maneuvers of the approved training course for the designation sought.

~~(3e)~~ For checks and tests that relate to ground training, the person must—

~~(1i)~~ Meet the requirements in paragraph ~~(ac)(1)~~ of this section;

~~(2ii)~~ Except for a course of training for a lighter-than-air rating, hold either a current flight instructor certificate with the appropriate category and class of aircraft, or ground instructor certificate with appropriate ratings, to be used in the course of training; and

~~(3iii)~~ For a course of training for a lighter-than-air rating, hold a commercial pilot certificate with a lighter-than-air category rating and the appropriate class rating.

~~(bf)~~ A person who meets the eligibility requirements in paragraph ~~(ac)~~ and (d) of this section ~~must:shall~~

~~(1) Be designated, in writing, by the chief instructor to conduct student stage checks, end-of-course tests, and instructor proficiency checks; and~~

~~(2) Be approved by the responsible Flight Standards office for the school.~~

~~(eg) Each check instructor must complete recurrent training in the areas specified in this section at least once every 12 calendar months, unless the instructor has completed initial check instructor training to conduct stage checks or end-of-course tests within the preceding 12 calendar months.~~

~~(h)~~ A check instructor may not conduct a stage check or an end-of-course test of any student for whom the check instructor has:

~~(1) Served as the principal instructor; or~~

~~(2) Recommended for a stage check or end-of-course test.~~

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40907, July 30, 1997, as amended by Docket FAA-2018-0119, Amdt. 141-19, 83 FR 9175, Mar. 5, 2018; Docket FAA-2023-1275, Amdt. 141-26, 89 FR 92488, Nov. 21, 2024]

§ 141.38 Airports Reserved.

~~(a) An applicant for a pilot school certificate or a provisional pilot school certificate must show that he or she has continuous use of each airport at which training flights originate.~~

~~(b) Each airport used for airplanes and gliders must have at least one runway or takeoff area that allows training aircraft to make a normal takeoff or landing under the following conditions at the aircraft's maximum certificated takeoff gross weight:~~

~~(1) Under wind conditions of not more than 5 miles per hour;~~

~~(2) At temperatures in the operating area equal to the mean high temperature for the hottest month of the year;~~

~~(3) If applicable, with the powerplant operation, and landing gear and flap operation recommended by the manufacturer; and~~

- ~~(4) In the case of a takeoff—~~
 - ~~(i) With smooth transition from liftoff to the best rate of climb speed without exceptional piloting skills or techniques; and~~
 - ~~(ii) Clearing all obstacles in the takeoff flight path by at least 50 feet.~~
- ~~(c) Each airport must have a wind direction indicator that is visible from the end of each runway at ground level;~~
- ~~(d) Each airport must have a traffic direction indicator when:~~
 - ~~(1) The airport does not have an operating control tower; and~~
 - ~~(2) UNICOM advisories are not available.~~
- ~~(e) Except as provided in paragraph (f) of this section, each airport used for night training flights must have permanent runway lights;~~
- ~~(f) An airport or seaplane base used for night training flights in seaplanes is permitted to use adequate nonpermanent lighting or shoreline lighting, if approved by the Administrator.~~

~~[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40907, July 30, 1997]~~

§ 141.39 Aircraft.

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, w~~When the school's training facility is located within the U.S., an applicant for a pilot school certificate or provisional pilot school certificate~~ must show that each aircraft used by the school for flight training and solo flights:
 - (1) Is a civil aircraft of the United States;
 - (2) Is certificated with a standard airworthiness certificate, a primary airworthiness certificate, or a special airworthiness certificate in the light-sport category unless the FAA determines otherwise because of the nature of the approved course;
 - (3) Is maintained and inspected in accordance with the requirements for aircraft operated for hire under part 91, subpart E, of this chapter;
 - (4) Has two pilot stations with engine-power controls that can be easily reached and operated in a normal manner from both pilot stations (for flight training); and
 - (5) Is equipped and maintained for IFR operations if used in a course involving IFR en route operations and instrument approaches. For training in the control and precision maneuvering of an aircraft by reference to instruments, the aircraft may be equipped as provided in the approved course of training.
- (b) When the school's training facility is located outside the U.S. and the training will be conducted outside the U.S., an applicant for a pilot school certificate or provisional pilot school certificate must show that each aircraft used by the school for flight training and solo flights:
 - (1) Is either a civil aircraft of the United States or a civil aircraft of foreign registry;
 - (2) Is certificated with a standard or primary airworthiness certificate or an equivalent certification from the foreign aviation authority;

(3) Is maintained and inspected in accordance with the requirements for aircraft operated for hire under part 91, subpart E of this chapter, or in accordance with equivalent maintenance and inspection from the foreign aviation authority's requirements;

(4) Has two pilot stations with engine-power controls that can be easily reached and operated in a normal manner from both pilot stations (for flight training); and

(5) Is equipped and maintained for IFR operations if used in a course involving IFR en route operations and instrument approaches. For training in the control and precision maneuvering of an aircraft by reference to instruments, the aircraft may be equipped as provided in the approved course of training.

[Docket FAA-2006-26661, 74 FR 42563, Aug. 21, 2009, as amended by Amdt. 141-13, 75 FR 5223, Feb. 1, 2010]

§ 141.41 ~~Full flight simulators, flight training devices, aviation training devices~~ Flight Simulation Training Devices (FSTDs), ~~and training aids, and equipment.~~

Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, An applicant for a pilot school certificate or a provisional pilot school certificate must show that its ~~full flight simulators, flight training devices, aviation training devices~~ Flight Simulation Training Devices (FSTDs), training aids, and equipment meet the following requirements:

(a) ***Full flight simulators and flight training devices.*** Each full flight simulator and flight training device used to obtain flight training credit in an approved pilot training course curriculum must be:

(1) Qualified under part 60 of this chapter, or a previously qualified device, as permitted in accordance with § 60.17 of this chapter; and

(2) Approved by the Administrator for the tasks and maneuvers specified in the approved pilot school curriculum, based on the qualified capabilities of the device.

(b) ***Aviation training devices.*** Each ~~basic~~ Basic Aviation Training Device (BATD) or ~~advanced~~ Advanced aviation-Aviation training-Training device-Device (AATD) used to obtain flight training credit in an approved pilot training course curriculum must be evaluated, qualified, and approved by the Administrator and authorized for such use in accordance with the applicable Letter of Authorization (LOA). The Administrator may approve additional tasks and maneuvers for such use through amendment of the LOA, when supported by the device's evaluated performance and the approved curriculum.

(c) Enhanced Advanced Aviation Training Devices (EAATDs). An Enhanced Advanced Aviation Training Device (EAATD) is an Advanced Aviation Training Device (AATD) that incorporates an enhanced visual system. An EAATD used to obtain flight training credit in an approved pilot training course curriculum must:

- (1) Meet all evaluation, qualification, and approval requirements applicable to an Advanced Aviation Training Device (AATD) under paragraph (b) of this section and be authorized for use under a current Letter of Authorization (LOA);
- (2) Be equipped with either—
 - (i) A visual system providing a minimum field of view of 210° horizontal by 40° vertical; or
 - (ii) An integrated Extended Reality (XR) visual system that provides an equivalent or greater level of immersive visual fidelity;
- (3) Have the enhanced visual capability evaluated and approved by the Administrator for the specific tasks and maneuvers for which additional credit, if any, is sought.
- (d) *Extended Reality (XR) training systems.* An extended reality training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), may be used to support ground or flight training in an approved pilot training course curriculum, provided that—
 - (1) The system is approved by the Administrator or validated in accordance with an accepted **consensus standard** recognized by the Administrator for the intended training use;
 - (2) The system accurately represents the procedures, tasks, and operational environment applicable to the training being conducted;
 - (3) The system is used only for those tasks and credit, if any, specifically authorized by the Administrator; and
 - (4) The pilot school maintains records and documentation demonstrating continued suitability and effectiveness of the system for the approved training purpose.
- (ee) *Training aids and equipment.* Each training aid and item of equipment, including any audiovisual aid, projector, procedural training aid~~mockup~~, chart, ~~or~~ aircraft component, electronic record keeping system, electronic logbook, tablet, computer, wearable display, vision-enhancing device, or other advanced electronic training aid, listed in the approved ~~training course outline~~Pilot Training Management Manual (PTMM), must be accurate, current, and relevant to the course for which it is used.

[Docket FAA-2015-1846, Amdt. 141-18, 81 FR 21460, Apr. 12, 2016]

§ 141.43 Pilot briefing areas.

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety. ~~An applicant for a pilot school certificate or provisional pilot school certificate~~ must show that ~~the applicant~~ it has continuous use of a briefing area located at each airport at which training flights originate, that is:
 - (1) Adequate to shelter students waiting to engage in their training flights; and
 - (2) Arranged and equipped for the conduct of pilot briefings; and

- ~~(3) Except as provided in paragraph (c) of this section, for a school with an instrument rating or commercial pilot course, equipped with private landline or telephone communication to the nearest FAA Flight Service Station.~~
- (b) A briefing area required by paragraph (a) of this section may ~~not be used by the applicant if it is available for use by any other~~ be shared with another pilot school, provided that the briefing area is not used concurrently by more than one pilot school during the period it is required for use by ~~the applicant~~ either pilot school.
- ~~(c) The communication equipment required by paragraph (a)(3) of this section is not required if the briefing area and the flight service station are located on the same airport, and are readily accessible to each other.~~

§ 141.45 Ground training facilities.

~~An applicant for a~~ Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, A pilot school or provisional pilot school certificate must show that:

- (a) Except as provided in paragraph (c) of this section, each room, training booth, or other space used for instructional purposes ~~is~~ must be adequately heated, lighted, ~~and~~ ventilated, and maintained to conform to local building, sanitation, and health codes.
- (b) Except as provided in paragraph (c) of this section, the training facility is so located that the students in that facility are not distracted by the training conducted in other rooms, or by flight and maintenance operations ~~at~~ on the airport.
- (c) If a training course is conducted through an internet-based medium, distance-learning, or other electronic instructional delivery method, the holder of a pilot school certificate ~~or provisional pilot school certificate~~ that provides such training need not comply with paragraphs (a) and (b) of this section but must maintain in current status a permanent business location and business telephone number.

[Docket FAA-2008-0938, 76 FR 54107, Aug. 31, 2011]

Subpart C—Pilot School Documentation, Training Course Outline and Curriculum

§ 141.51 Applicability.

Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, t~~This subpart prescribes the required pilot school documentation,~~ curriculum and course outline requirements for the issuance of a pilot school certificate ~~or provisional pilot school certificate~~ and ratings.

§ 141.52 Pilot Training Management Manual (PTMM).

- (a) Each certificated pilot school must develop, maintain, and comply with a Pilot Training Management Manual (PTMM) acceptable to the Administrator.
- (b) The Pilot Training Management Manual (PTMM) must describe the pilot school's:
- (1) Safety Management System (SMS) in accordance with 141.82;

(2) Quality Management System in accordance with 141.83;

(3) If applicable, policies and procedures specifically related to examining authority;

(4) General organizational policies and procedures governing training, evaluation, and oversight;

(5) Instructor qualification, standardization, and training requirements;

(6) A description of each room used for ground training, including the room's size and the maximum number of students that may be trained in the room at one time, unless the course is provided via an internet-based training medium;

(67) A description of each type of training aid and/or equipment used for ground training for each course;

(78) A description of each Flight Simulation Training Device (FSTD) and/or extended reality (XR) training system used for training in each course;

~~(6) A listing of the airports at which training flights originate and a description of the facilities, including pilot briefing areas that are available for use by the school's students and personnel at each of those airports;~~

(9) A description of the type of aircraft including any special equipment used for each course and phase of training;

(c) The Pilot Training Management Manual (PTMM) may be maintained in electronic form and must be kept current and accessible to the Administrator.

(d) The pilot school must ensure that personnel with assigned responsibilities are provided access and that they are trained on and comply with the applicable portions of the manual.

§ 141.53 Approval procedures for a training course: General.

(a) **General.** ~~An applicant for a~~ pilot school ~~certificate or provisional pilot school certificate must obtain the Administrator's approval of the outline of each training course for which certification and rating is sought.~~may not conduct training in a certification or rating course unless the training course outline has been approved, deemed approved under paragraph (b)(4) or (c)(2)(ii), or amended in accordance with paragraph (c)(4) of this section.

(b) *Application-Initial training course approval*

(1) An application for the approval of an initial ~~or amended~~ training course must be submitted ~~in duplicate to the responsible Flight Standards office for the area where the school is based.~~ in a manner acceptable to the Administrator to the FAAs part 141 Central Management Office (CMO).

(2) An application for the approval of an initial ~~or amended~~ training course must be submitted at least 30 days before any training under that course, or any amendment

thereto, is scheduled to begin. For purposes of this section, an application is considered complete when all materials required by this part have been submitted.

(3) Within 30 calendar days after receipt of a complete application submitted under paragraph (b)(1) of this section, the Administrator must—

(i) Approve the application;

(ii) Deny the application in writing, stating the specific reasons for denial; or

(iii) Notify the applicant in writing of any deficiencies that must be corrected before approval may be granted.

(4) If the Administrator does not take one of the actions described in paragraphs (b)(3)(i) through (iii) within 30 calendar days of receipt of a complete application, the training course will be considered approved as submitted.

(c) Amendment to training courses

(1) Except as provided in paragraph (4) of this section, an application for the approval of an amended training course must be submitted in a manner acceptable to the Administrator to the FAA 141 Central Management Office (CMO).

(2) Except as provided in paragraph (4) of this section, an application for the approval of an amended training course must be submitted at least 30 days before any training under that course, or any amendment thereto, is scheduled to begin. For purposes of this section, an application is considered complete when all materials required by this part have been submitted.

(i) Within 30 calendar days after receipt of a complete application submitted under paragraph (c)(2) of this section, the Administrator must—

(A) Approve the application;

(B) Deny the application in writing, stating the specific reasons for denial; or

(C) Notify the applicant in writing of any deficiencies that must be corrected before approval may be granted.

(ii) If the Administrator does not take one of the actions described in paragraphs (c)(2)(i)(A) through (C) within 30 calendar days of receipt of a complete application, the training course amendment will be considered approved as submitted.

(3) Minor editorial and typographical changes do not require FAA amendment approval, provided the school notifies the FAA within 30 days of their insertion.

(4) Pilot schools that meet the requirements of 141.83(b)(2) retain the ability to amend a training course without FAA authorization provided that the pilot school notifies the FAA Central Management Office (CMO) within 30 days of the change.

(i) The pilot school must maintain documented evidence, derived from its Quality Management System, that supports each amendment to a training course; and

(ii) The pilot school shall make evidence of each training course amendment available to the Administrator upon request.

~~(3) An application for amending a training course must be accompanied by two copies of the amendment.~~

~~(ed)~~ **Training courses.** ~~An applicant for a pilot school certificate or provisional pilot school certificate~~ may request approval for the training courses specified under § 141.11(b).

~~(de)~~ **Additional rules for internet based training courses.** An application for an initial or amended training course offered through an internet based medium must comply with the following:

~~(1) Amendments to internet-based training courses must be identified and documented through an associated syllabus. Such documentation must include a revision number, date, and description of the change. Minor editorial or typographical changes to the associated syllabus that do not affect course objectives, structure, or regulatory compliance do not require prior FAA approval, provided the certificate holder notifies the FAA within 30 days of implementation. Minor editorial, clarifying, or instructional enhancements made within the internet-based course content that do not affect course objectives, structure, or regulatory compliance do not require FAA approval or notification, provided such changes remain consistent within the FAA-accepted syllabus. The certificate holder must ensure that all substantive changes to course content, structure, or delivery that affect regulatory compliance are reflected in the associated syllabus and submitted for FAA review as required. All amendments must be identified numerically by page, date, and screen. Minor editorial and typographical changes do not require FAA approval, regardless of the pilot school's Quality Management System (QMS) tier, provided the school notifies the FAA Central Management Office (CMO) within 30 days of their insertion incorporating such changes.~~

(2) For monitoring purposes, the school must provide the FAA an acceptable means to log-in and log-off from a remote location to review all elements of the course as viewed by attendees and to by-pass the normal attendee restrictions.

(3) The school must incorporate adequate security measures into its internet-based courseware information system and into its operating and maintenance procedures to ensure the following fundamental areas of security and protection:

- (i) Integrity.
- (ii) Identification/Authentication.
- (iii) Confidentiality.
- (iv) Availability.
- (v) Access control.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997; Amdt. 141-12, 74 FR 42563, Aug. 21, 2009; Amdt. 141-15, 76 FR 54107, Aug. 31, 2011, as amended by Docket FAA-2018-0119, Amdt. 141-19, 83 FR 9175, Mar. 5, 2018]

§ 141.55 Training course: Contents.

- (a) ~~Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety,~~ Each training course for which approval is requested must meet the minimum curriculum requirements in accordance with the appropriate appendix of this part.
- (b) ~~Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety and e~~ Except as provided in paragraphs (d) and (e) of this section, each training course for which approval is requested must meet the minimum ground and flight training time requirements in accordance with the appropriate appendix of this part.
- (c) Each training course for which approval is requested must contain:
- ~~(1) A description of each room used for ground training, including the room's size and the maximum number of students that may be trained in the room at one time, unless the course is provided via an internet-based training medium;~~
 - ~~(2) A description of each type of audiovisual aid, projector, tape recorder, mockup, chart, aircraft component, and other special training aids used for ground training;~~
 - ~~(3) A description of each flight simulator or flight training device used for training;~~
 - ~~(4) A listing of the airports at which training flights originate and a description of the facilities, including pilot briefing areas that are available for use by the school's students and personnel at each of those airports;~~
 - ~~(5) A description of the type of aircraft including any special equipment used for each phase of training;~~
 - (6) The minimum qualifications and ratings for each instructor assigned to ground or flight training; and
 - (7) A training syllabus that includes the following information—
 - (i) The prerequisites for enrolling in the ground and flight portion of the course that include the pilot certificate and rating (if required by this part), training, pilot experience, and pilot knowledge;
 - (ii) A detailed description of each lesson, including the lesson's objectives, standards, and planned time for completion;
 - (iii) A description of what the course is expected to accomplish with regard to student learning;
 - (iv) The expected accomplishments and the standards for each stage of training; and
 - (v) A description of the checks and tests to be used to measure a student's accomplishments for each stage of training.
 - ~~(vi) Planned ground and flight training time requirements for the course.~~
- (d) A pilot school may request and receive initial approval ~~for a period of not more than 24 calendar months~~ for any training course under this part that does not meet the minimum ground and flight training time requirements, provided the following provisions are met:

- (1) The school ~~holds a pilot school certificate issued under this part and has held that certificate for a period of at least 24 consecutive calendar months preceding the month of the request;~~ meets and maintains the Quality Management System requirements of § 141.83(b)(2), as demonstrated by documented evidence that the system is implemented, monitored, reviewed, and effective in practice; and
- (2) ~~In addition to the information required by paragraph (c) of this section, the training course specifies planned ground and flight training time requirements for the course;~~
- (3) ~~The school does not request the training course to be approved for examining authority, nor may that school hold examining authority for that course; and~~
- (42) The practical test or knowledge test for the course is to be given by—
- (i) An FAA inspector; ~~or~~
 - (ii) An examiner who is not an employee of the school; or
 - (iii) An individual authorized to conduct such tests under an Organization Designation Authorization (ODA), acting within the scope of that authorization.
- (3) End-of-Course Practical Test. When the practical test required for certification is conducted in accordance with paragraph (d)(2) of this section as part of the school's end-of-course evaluation, the test shall constitute the required practical test for the issuance of the certificate or rating. In such cases—
- (i) The graduation certificate may be issued upon satisfactory completion of that practical test; and
 - (ii) No additional practical test shall be required following graduation for that course.
- (e) A pilot school may request and receive ~~final approval~~ the privilege of examining authority for any training course under this part that does not meet the minimum ground and flight training time requirements, provided the following conditions are met:
- (1) The school has held initial approval for that training course for at least 24 calendar months.
 - (2) The pilot school has—
 - (i) ~~Trained at least 10–30 students in that training course within the preceding 24 calendar months~~ and recommended those students for a pilot, flight instructor, or ground instructor certificate or rating; and
 - (ii) ~~At least 80 percent of those students passed the practical or knowledge test, as appropriate, on the first attempt, and that test was given by—~~
 - (i) The practical or knowledge test, as appropriate, was given by:
 - (A) An FAA inspector; or
 - (B) An examiner who is not an employee of the school.
 - (C) An individual authorized to conduct such tests under an Organization Designation Authority (ODA), acting within the scope of that authorization.

(3) The pilot school has provided the Administrator with clear evidence, based on analysis through its approved quality system, showing that students in the reduced-time course consistently achieve all required learning outcomes. This evidence must demonstrate:

(i) students meet the required knowledge, skill, and proficiency standards on stage checks, end-of-course evaluations;

(ii) graduates are fully prepared for FAA knowledge and practical tests; and

(iii) an analysis of training performance trends, including identification and corrective action for any deficiencies affecting student proficiency, quality, or safety; and

(4) The pilot school meets and maintains the Quality Management System requirements of § 141.83(b)(2), as demonstrated by documented evidence that the system is implemented, monitored, reviewed, and effective in practice. In addition to the information required by paragraph (c) of this section, the training course specifies planned ground and flight training time requirements for the course.

~~(4) The school does not request that the training course be approved for examining authority nor may that school hold examining authority for that course.~~

[Docket 25910, 62 FR 16347, Apr. 4, 1997, as amended by Amdt. 141-12, 74 FR 42563, Aug. 21, 2009; Amdt. 141-15, 76 FR 54107, Aug. 31, 2011]

§ 141.57 Special curricula.

~~An applicant for a pilot school certificate or provisional pilot school certificate~~ may apply for approval to conduct a special course of airman training ~~for which a curriculum is not prescribed in the appendixes of this part,~~ if the applicant shows that the training course contains features that could achieve a level of pilot proficiency equivalent to that achieved by a training course prescribed in the other appendixes of this part or the requirements of part 61 of this chapter.

Subpart D—Examining Authority

§ 141.61 Applicability.

Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, ~~T~~his subpart prescribes the requirements for the issuance of examining authority to the holder of a pilot school certificate, and the privileges and limitations of that examining authority.

§ 141.63 Examining authority ~~qualification—privilege~~ requirements.

(a) A pilot school ~~must~~ shall meet the following prerequisites to receive initial approval for examining authority:

~~(1) The school must complete the application for examining authority on a form and in a manner prescribed by the Administrator;~~

- (21) The school ~~must~~ shall hold a pilot school certificate and rating issued under this part;
- (32) The school ~~must~~ shall have held the rating in which examining authority is sought for at least ~~24 consecutive calendar months preceding the month of application for examining authority~~ 1 year;
- ~~(4) The training course for which examining authority is requested may not be a course that is approved without meeting the minimum ground and flight training time requirements of this part; and~~
- ~~(3) The pilot school shall have trained and graduated at least 10 students in the training course for which examining authority is sought; and~~
- ~~(4) The pilot school meets the Quality Management System requirements of § 141.83(b)(2), as demonstrated by documented evidence that the system is implemented, monitored, reviewed, and effective in practice;~~
- ~~(5) Within 24 calendar months before the date of application for examining authority, that school must meet the following requirements—~~
 - ~~(i) The school must have trained at least 10 students in the training course for which examining authority is sought and recommended those students for a pilot, flight instructor, or ground instructor certificate or rating; and~~
 - ~~(ii) At least 90 percent of those students passed the required practical or knowledge test, or any combination thereof, for the pilot, flight instructor, or ground instructor certificate or rating on the first attempt, and that test was given by—~~
 - ~~(A) An FAA inspector; or~~
 - ~~(B) An examiner who is not an employee of the school.~~
- ~~(5) The pilot school shall hold an approved syllabus for check instructor training required in §141.37;~~
- ~~(6) The pilot school shall develop and maintain policies and procedures within its Pilot Training Management Manual (PTMM) that describe the pilot school's examining authority processes and procedures, as required by § 141.52(b)(3) of this part;~~
- ~~(7) The pilot school shall have an Airmen Certification Representative (ACR-141) employed at the pilot school or one that is available to them;~~
- ~~(8) The pilot school shall complete the application for examining authority;~~
- ~~(9) The pilot school shall demonstrate, through evaluation of the chief instructor, that the chief instructor ensures the pilot school's examining authority is exercised correctly and consistently by authorized personnel, and that such oversight reflects appropriate ethics, responsibility, and accountability, and is consistent with—~~
 - ~~(i) The pilot school's examining authority policies and procedures required by paragraph (d) of this section;~~
 - ~~(ii) The pilot school's approved check instructor training syllabus; and~~
 - ~~(iii) The applicable airman certification standards acceptable to the Administrator.~~

(10) An appropriate number of end-of-course tests, conducted by the chief instructor, assistant chief instructor, and/or check instructor, are observed in person or by electronic means, determining the pilot school's examining authority process meets the expectations of the Administrator. The focus of the observation is the pilot school and evaluator's ability to conduct an evaluation appropriate to the Administrator. The performance of the applicant is not a determining factor.

(b) A pilot school must meet the following requirements to retain approval of its examining authority:

(1) The school must complete the application for renewal of its examining authority on a form and in a manner prescribed by the Administrator; The pilot school must continuously meet the Quality Management System requirements of § 141.83(b)(2), as demonstrated by documented evidence that the system is implemented, monitored, reviewed, and effective in practice;

(2) The school must hold a pilot school certificate and rating issued under this part;

(3) The school must have held the rating for which continued examining authority is sought for at least 24 calendar months preceding the month of application for renewal of its examining authority; and The chief instructor or designee has attended annual training provided by the FAA or other means acceptable to the Administrator, on areas associated with examining authority procedures and expectations;

(4) The training course for which continued examining authority is requested may not be a course that is approved without meeting the minimum ground and flight training time requirements of this part. The pilot school must maintain an approved syllabus for check instructor training required by § 141.37(b) and ensure that the syllabus remains current and implemented;

(5) The pilot school must maintain and comply with an approved policies and procedures manual that describes the pilot school's examining authority processes, as required by paragraph (d) of this section; and

(6) The pilot school must have continuous access to an Airman Certification Representative (ACR-141), either through employment by the pilot school or through an arrangement that ensures timely availability to support examining authority activities.

(c) Failure to meet the requirements of paragraph (b) of this section constitutes grounds for suspension or revocation of the pilot school's examining authority privileges.

(d) Each pilot school authorized to exercise examining authority shall develop, maintain, and comply with examining authority policies and procedures contained within its Pilot Training Management Manual (PTMM), as required by § 141.52(b)(3). The examining authority section of the Pilot Training Management Manual (PTMM) shall describe the requirements, guidance, and processes governing the pilot school's examining authority and shall include guidance on the following areas:

- (1) Applicant eligibility and examining procedures;
 - (2) Expectations for check instructor plans of action, including requirements for periodic review, revision, and adjustment, as appropriate;
 - (3) Check instructor qualification requirements;
 - (4) Check instructor roles, responsibilities, expectations, and limitations;
 - (5) Oversight and quality control processes, including requirements for observation of check instructors conducting end-of-course tests;
 - (6) Recordkeeping and documentation requirements; and
 - (7) End-of-course test procedures, including applicable calendar-time limitations for completion of the end-of-course test.
- (e) To obtain approval to exercise examining authority for an additional training syllabus listed in § 141.11, a pilot school shall meet the following requirements:
- (1) The pilot school shall have already been approved for examining authority under this part;
 - (2) The pilot school shall hold a valid pilot school certificate and rating issued under this part;
 - (3) The pilot school shall have held the rating for which examining authority is sought for at least 1 year;
 - (4) The number of students required to have been trained and graduated from the course may, at the discretion of the Administrator, be reduced from the requirements specified in paragraph (a) of this section, based on the pilot school's demonstrated prior performance while exercising examining authority;
 - (5) The pilot school must demonstrate that it has continuously met the Quality Management System requirements of § 141.83(b)(2), as evidenced by documented records showing that the system is implemented, monitored, reviewed, and effective in practice;
 - (6) The check instructor is evaluated on the pilot school's examining authority process and procedures associated with the additional training syllabus to include the following areas:
 - (i) The pilot school's examining authority policies and procedures;
 - (ii) The pilot school's approved check instructor training syllabus;
 - (iii) Adherence to airman certification standards appropriate to the Administrator.
 - (7) Through observation of end-of-course tests conducted by the chief instructor, assistant chief instructor, and/or check instructor, either in person or through electronic means, the pilot school shall demonstrate that its examining authority processes and procedures for the additional course are exercised in a manner acceptable to the Administrator.
 - (i) The number of end-of-course tests required to be observed may, at the discretion of the Administrator, be reduced from the number required for initial examining

authority approval under paragraph (a) of this section, based on the pilot school's demonstrated prior performance while exercising examining authority; and
 (ii) The focus of the observation must be the pilot school's examining authority processes and the evaluator's conduct of the evaluation. The performance of the applicant during the test is not a determining factor for compliance with this requirement.

(f) Course modifications impact on examining authority. The approval of revisions, amendments, or modifications to an approved training syllabus or training course outline does not, by itself, result in the suspension, withdrawal, or loss of examining authority, provided the pilot school continues to meet the applicable requirements of this part, including § 141.83(b)(2), and exercises examining authority in a manner acceptable to the Administrator.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997]

§ 141.65 Privileges.

A pilot school that holds examining authority may recommend a person who graduated from its course for the appropriate pilot, flight instructor, or ground instructor certificate or rating ~~without taking the FAA knowledge test or practical test~~ by completing the appropriate end-of-course test in accordance with the provisions of this subpart.

§ 141.67 Operations, Limitations, and reports.

A pilot school that holds examining authority may only recommend the issuance of a pilot, flight instructor, or ground instructor certificate and rating to a person who ~~does not take an FAA knowledge test or practical~~ completes an end-of-course test, if the recommendation for the issuance of that certificate or rating is in accordance with the following requirements:

(a) The person graduated from a training course for which the pilot school holds examining authority.

(b) Except as provided in ~~this paragraph~~ (c) of this section, the person satisfactorily completed all the curriculum requirements of that pilot school's approved training course.

(c) Except as provided in paragraph (d) a ~~A~~ person who transfers ~~from one part 141 approved pilot school to another into a~~ part 141 approved pilot school may receive credit for that previous training and experience, provided the following requirements are met:

(1) The maximum credited training time does not exceed one-half of the receiving school's curriculum requirements;

(2) The person completes a knowledge and proficiency test conducted by the receiving school for the purpose of determining the amount of pilot experience and knowledge to be credited;

- (3) The receiving school determines (based on the person's performance on the knowledge and proficiency test required by paragraph (b)(2) of this section) the amount of credit to be awarded, and records that credit in the person's training record; and
- ~~(4) The person who requests credit for previous pilot experience and knowledge obtained the experience and knowledge from another part 141 approved pilot school and training course; and~~
- ~~(5) The receiving school retains a copy of documents the person's training record from the previous school, experience, and the knowledge/proficiency test required by this section.~~
- (d) A student is not permitted to receive any course credit toward a Professional Pilot Track when transferring mid course.
- (e) End-of-course tests given by a pilot school that holds examining authority must be approved by the Administrator and be at least equal in scope, depth, and difficulty to the comparable knowledge and practical tests prescribed by the Administrator ~~under part 61 of this chapter.~~
- (f) A pilot school that holds examining authority may not use its ~~knowledge or practical~~ end-of-course tests if the school:
- (1) Knows, or has reason to believe, the test has been compromised; or
 - (2) Is notified by the ~~responsible Flight Standards office~~ Administrator that there is reason to believe or it is known that the test has been compromised.
- ~~(g)~~ A pilot school that holds examining authority must maintain a record of all temporary airman certificates it issues, which consist of the following information:
- (1) A chronological listing that includes—
 - (i) The date the temporary airman certificate was issued;
 - (ii) The student to whom the temporary airman certificate was issued, and that student's permanent mailing address and telephone number;
 - (iii) The training course from which the student graduated;
 - (iv) The name of person who conducted the knowledge or practical test;
 - (v) The type of temporary airman certificate or rating issued to the student; and
 - (vi) The date the student's airman application file was sent to the FAA for processing for a permanent airman certificate.
 - (2) A copy of the record containing each student's graduation certificate, ~~airman application, temporary airman certificate,~~ superseded airman certificate (if applicable), and knowledge test ~~or practical test~~ results; and
 - (3) The records required by paragraph (e) of this section must be retained for 1 year and made available to the Administrator upon request. These records must be surrendered to the Administrator when the pilot school ceases to have examining authority.

~~(f) Except for pilot schools that have an airman certification representative, when a student passes the knowledge test or practical test, the pilot school that holds examining authority must submit that student's airman application file and training record to the FAA for processing for the issuance of a permanent airman certificate.~~

§ 141.69 Prerequisites, Process, and Procedures for an End-of-Course Test

~~(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, equivalent to the scope of an end-of-course test conducted by a pilot school authorized for examining authority is a test on the areas of operations for an airman certificate, rating, or authorization that is conducted by having the applicant respond to questions and demonstrate maneuvers in flight, or in Flight Simulation Training Device (FSTDs).~~

~~(1) All applicable areas of the Airmen Certification Standards (ACS) shall be met;~~

~~(2) The oral portion shall be conducted before the flight portion;~~

~~(3) The oral and flight portion are not required to be scheduled on the same day. When the oral is complete and the flight portion is planned for another day, the applicant's records shall be updated to reflect satisfactory performance of oral questioning;~~

~~(i) A letter of discontinuance is not required to be issued;~~

~~(ii) The flight portion is required to be completed within 60 days of completing the oral portion of the end-of-course test.~~

~~(iii) If the flight portion is not completed within 60 days of completing the oral portion, the applicant shall retake the entire end-of-course test.~~

~~(4) The flight and FSTD time accrued during the end-of-course test is permitted to count towards training course and aeronautical experience requirements.~~

~~(b) Except as provided in paragraphs (c) of this section, to be eligible for an end-of-course test for a certificate or rating issued under this part, an applicant shall:~~

~~(1) Pass the required knowledge test;~~

~~(i) Within the 24-calendar-month period preceding the month the applicant completes the end-of-course test, if a knowledge test is required, or~~

~~(ii) Within the 60-calendar-month period preceding the month the applicant completes the end-of-course test for those applicants who complete the airline transport pilot certification training program in §141.11 and pass the knowledge test for an airline transport pilot certificate with a multiengine class rating.~~

~~(2) Present the knowledge test report at the end-of-course test, if a knowledge test is required;~~

~~(3) Have satisfactorily accomplished the required training prescribed by this part for the certificate or rating sought, and obtained the appropriate amount of aeronautical~~

- experience prescribed by this part so that all aeronautical experience requirements are met at the completion of the end-of-course test;
- (4) Has received and logged training time within 2 calendar months preceding the month of when the end-of-course test is conducted;
- (5) For other than sport pilot, holds at least a third class medical certificate, or meets the requirements of § 61.113(i), if a medical certificate is required;
- (6) For a sport pilot, comply with the requirements of 61.303;
- (7) Meet the prescribed age requirement of part 61 for the issuance of the certificate or rating sought;
- (8) Have an endorsement, if required by this part, in the applicant's logbook or training record that has been signed by an authorized instructor who certifies that the applicant;
- (i) Is prepared for the end-of-course test; and
- (ii) Has demonstrated satisfactory knowledge of the subject areas in which the applicant was deficient on the airman knowledge test;
- (c) A person is not required to comply with the provisions of paragraph (b)(6) of this section if that person is applying for an airline transport pilot certificate or an additional rating to an airline transport certificate in an aircraft that does not require an aircraft type rating end-of-course test;
- (e) The end-of-course test is conducted by the pilot school's chief instructor, assistant chief instructor authorized for the course, or check instructor that has been designated by the chief instructor for the specific end-of-course test;
- (f) At the completion of the end-of-course test, FAA form 8710 is completed and the pilot school will issue a graduation certificate attesting to the applicant has met all requirements of the pilot school's course of training;
- (i) Pilot schools authorized for examining authority will have an airman certification representative (ACR-141) issue a temporary certificate without further testing to the applicant.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997, as amended by Docket FAA-2018-0119, Amdt. 141-19, 83 FR 9176, Mar. 5, 2018]

Subpart E—Operating Rules

§ 141.71 Applicability.

Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety. This this subpart prescribes the operating rules applicable to a pilot school ~~or provisional pilot school~~ certificated under the provisions of this part.

§ 141.73 Privileges.

(a) The holder of a pilot school certificate ~~or a provisional pilot school certificate~~ may advertise and conduct approved pilot training courses in accordance with the certificate and any ratings that it holds.

(b) A pilot school that holds examining authority for an approved training course may recommend a graduate of that course for the issuance of an appropriate pilot, flight instructor, or ground instructor certificate and rating, without taking an FAA ~~knowledge test or~~ practical test, provided the training course has been approved ~~and meets the minimum ground and flight training time requirements of this part by the Administrator.~~

§ 141.75 Aircraft requirements.

The following items must be carried on each aircraft used for flight training and solo flights:

- (a) A pretakeoff and prelanding checklist; and
- (b) The operator's handbook for the aircraft, if one is furnished by the manufacturer, or copies of the handbook if furnished to each student using the aircraft.

[Docket 25910, 62 FR 40908, July 30, 1997]

§ 141.77 Limitations.

(a) The holder of a pilot school certificate ~~or a provisional pilot school certificate~~ may not issue a graduation certificate to a student, or recommend a student for a pilot certificate or rating, unless the student has:

- (1) Completed the training specified in the pilot school's course of training; and
- (2) Passed the required final tests.

(b) Except as provided in paragraph (c) of this section, the holder of a pilot school ~~certificate or a provisional pilot school certificate~~ may not graduate a student from a course of training unless the student has completed all of the curriculum requirements of that course;

(c) ~~Except as provided in paragraph (d) of this section, a~~ student may be given credit towards the curriculum requirements of a course for previous training ~~and experience~~ under the following conditions:

- (1) If the student completed a proficiency test and knowledge test that was conducted by the receiving pilot school and the previous training was based on a part 141- or a part 142-approved flight training course, the credit is limited to not more than ~~75~~50 percent of the flight training requirements of the curriculum.
- (2) If the student completed a knowledge test that was conducted by the receiving pilot school and the previous training was based on a part 141- or a part 142-approved aeronautical knowledge training course, the credit is limited to not more than ~~75~~50 percent of the aeronautical knowledge training requirements of the curriculum.
- (3) If the student completed a proficiency test and knowledge test that was conducted by the receiving pilot school and the training was received from other than a part 141-

or a part 142-approved flight training course, the credit is limited to not more than 25 percent of the flight training requirements of the curriculum.

(4) If the student completed a knowledge test that was conducted by the receiving pilot school and the previous training was received from other than a part 141- or a part 142-approved aeronautical knowledge training course, the credit is limited to not more than 25 percent of the aeronautical knowledge training requirements of the curriculum.

(5) Completion of previous training must be certified in the student's training record by the training provider or a management official within the training provider's organization, and must contain—

(i) The kind and amount of training provided; and

(ii) The result of each stage check and end-of-course test, if appropriate.

(d) No transfer credit for the Professional Pilot Track courses will be granted.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997; Amdt. 141-12, 74 FR 42564, Aug. 21, 2009]

§ 141.79 Flight training.

(a) Except as provided in 141.33(a)(4) of this part, No-no person other than a certificated flight instructor or commercial pilot with a lighter-than-air rating who has the ratings and the minimum qualifications specified in the approved training course outline may give a student flight training under an approved course of training.

(b) No student pilot may be authorized to start a solo practice flight from an airport until the flight has been approved by a certificated flight instructor or commercial pilot with a lighter-than-air rating who is present at that airport.

(c) Each chief instructor and assistant chief instructor assigned to a training course must complete, at least once every 12 calendar months, an approved syllabus of training consisting of ground or flight training, or both, or an approved flight instructor refresher course.

(d) Each certificated flight instructor, designated instructor to meet the requirements of 141.33(a)(4) of this ~~or~~chapter or commercial pilot with a lighter-than-air rating who is assigned to a flight training course must satisfactorily complete the following tasks, which must be administered by the school's chief instructor, assistant chief instructor, or check instructor:

(1) Prior to receiving authorization to train students in a flight training course, must—

(i) Accomplish a review of and receive a briefing on the objectives and standards of that training course;

(ii) Receive a briefing on historical student performance data and trends for the applicable training course, derived from the pilot school's Quality Management System (QMS), to support effective instruction; and

- (iii) Accomplish an initial proficiency check in each make and model of aircraft or, if appropriate, Flight Simulation Training Device (FSTD), used in that training course in which that person provides training; and
- (2) Every 12 calendar months after the month in which the person last complied with the requirements of paragraph (d)(1)(iii) of this section, accomplish:
 - (i) a recurrent proficiency check in one of the aircraft or, if appropriate, Flight Simulation Training Device (FSTD) in which the person trains students, and
 - (ii) Receive a current briefing on historical student performance data and trends for the applicable training course, derived from the pilot school's Quality Management System (QMS), to support effective instruction.-

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997]

§ 141.81 Ground training.

- (a) Except as provided in paragraph (b) of this section or 141.33(a)(4) of this chapter, each instructor who is assigned to a ground training course must hold a flight or ground instructor certificate, or a commercial pilot certificate with a lighter-than-air rating, with the appropriate rating for that course of training.
- (b) A person who does not meet the requirements of paragraph (a) of this section may be assigned ground training duties in a ground training course, if:
 - (1) The chief instructor who is assigned to that ground training course finds the person qualified to give that training; and
 - (2) The training is given while under the supervision of the chief instructor or the assistant chief instructor who is present at the facility when the training is given.
- (c) An instructor may not be used in a ground training course until that instructor has been:
 - (i) ~~briefed~~ Briefed on the objectives and standards of that course by the chief instructor, assistant chief instructor, or check instructor, and
 - (ii) Briefed on historical student performance data and trends for the applicable training course, derived from the pilot school's Quality Management System (QMS), to support effective instruction

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[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997]

§ 141.82 Safety Management System (SMS) Requirements

- (a) General. Each certificated pilot school must establish and maintain an Safety Management System (SMS) appropriate to the size, scope, and complexity of its operations.
- (b) Framework. The Safety Management System (SMS) must be consistent with the principles and intent of 14 CFR part 5 and include:
 - (1) Safety policy.

(2) Safety risk management.

(3) Safety assurance.

(4) Safety promotion.

(c) Integration with training. The pilot school must define, in its Pilot Training Management Manual (PTMM), how Safety Management System (SMS) outputs relevant to training are communicated to the chief instructor and the Quality Management System (QMS) to ensure the SMS recommendations are considered in training oversight, standardization, and the continuous improvement process.

(d) Roles and responsibilities. The pilot school must define and document roles, responsibilities, and authority related to the Safety Management System (SMS) to ensure effective hazard identification, risk management, safety assurance, and safety promotion. These roles must be appropriate to the size, scope, and complexity of the pilot school's operations and must be described in the Pilot Training Management Manual (PTMM) required by this part.

(1) SMS Accountable Executive. Designation of an individual who has ultimate responsibility and accountability for the implementation and continued effectiveness of the Safety Management System (SMS). The SMS Accountable Executive must have sufficient authority over resources and personnel to ensure that safety risks are identified, assessed, and managed in accordance with this part.

(2) Designation of management personnel. The accountable executive must designate sufficient management personnel who, on behalf of the accountable executive, are responsible for:

(i) Coordinate implementation, maintenance, and integration of the SMS throughout the person's organization

(ii) Facilitate hazard identification and safety risk controls.

(iii) Monitor the effectiveness of safety risk controls.

(iv) Ensure safety promotion throughout the person's organization.

(v) Regularly report to the accountable executive on the performance of the SMS and on any need for improvement.

(3) Chief instructor participation. The pilot school must define the chief instructor's roles, responsibilities, and decision-making authority with respect to participation in the Safety Management System (SMS), including review of safety-related information relevant to training that is made available through the SMS, and determination of appropriate training-related actions arising from SMS outputs.

(4) Combination of roles. The SMS Accountable Executive may also serve as the Accountable Manager for the Quality Management System, provided that the pilot school defines in its Pilot Training Management Manual (PTMM) how the combined roles are exercised to ensure effective implementation and oversight of both systems.

(e) The holder of a pilot school certificate or a provisional pilot school certificate must, at the time a student is enrolled in an approved training course, furnish that student with

a copy of or electronic access to the safety procedures and practices. Those procedures and practices shall include training on at least the following information—

- (1) The weather minimums required by the school for dual and solo flights;
- (2) The procedures for starting and taxiing aircraft on the ramp;
- (3) Fire precautions and procedures;
- (4) Redispatch procedures after unprogrammed landings, on and off airports;
- (5) Aircraft discrepancies and approval for return-to-service determinations;
- (6) Securing of aircraft when not in use;
- (7) Fuel reserves necessary for local and cross-country flights;
- (8) Avoidance of other aircraft in flight and on the ground;
- (9) Minimum altitude limitations and simulated emergency landing instructions; and
- (10) A description of and instructions regarding the use of assigned practice areas.

§ 141.83 Quality Management System (QMS)

Requirements~~Quality of training.~~

- ~~(a) Each pilot school or provisional pilot school must meet the following requirements:~~
 - ~~(1) Comply with its approved training course; and~~
 - ~~(2) Provide training of such quality that meets the requirements of § 141.5(d) of this part.~~
- ~~(b) The failure of a pilot school or provisional pilot school to maintain the quality of training specified in paragraph (a) of this section may be the basis for suspending or revoking that school's certificate.~~
- ~~(c) When requested by the Administrator, a pilot school or provisional pilot school must allow the FAA to administer any knowledge test, practical test, stage check, or end-of-course test to its students.~~
- ~~(d) When a stage check or end-of-course test is administered by the FAA under the provisions of paragraph (c) of this section, and the student has not completed the training course, then that test will be based on the standards prescribed in the school's approved training course.~~
- ~~(e) When a practical test or knowledge test is administered by the FAA under the provisions of paragraph (c) of this section, to a student who has completed the school's training course, that test will be based upon the areas of operation approved by the Administrator.~~

~~[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997]~~

- (a) General. Each pilot school must establish, implement, and maintain a Quality Management System (QMS) appropriate to the size, scope, and complexity of its operations. The QMS must be documented and must ensure compliance with this part through systematic monitoring, corrective action, and continuous improvement.

(b) Required QMS Elements. The QMS must include, at a minimum, the following elements:

(1) *Quality Policy and Documentation Requirements.* Each pilot school must establish and maintain a documented quality framework that includes:

(i) *Quality Policy.* A written quality policy, approved by senior management, stating the school's commitment to compliance with applicable regulatory requirements and to the continuous improvement of its training and operational processes;

(ii) *Quality Manual.* A controlled Quality Manual that describes the structure, responsibilities, policies, and processes of the Quality Management System, including how the requirements of this section are met. The Quality Manual must be kept current, may be maintained as a standalone document or as part of the Pilot Training Management Manual (PTMM), and must be made available to the Administrator upon request; and

(iii) *Document and Record Control.* Procedures to ensure that required documents and records are approved, current, accessible to personnel, and protected from unauthorized alteration, damage, or loss.

(2) *Roles and Responsibilities.* The pilot school must define, and document roles, responsibilities, and authority related to the Quality Management System (QMS) to ensure effective implementation, oversight, and continual improvement. These roles must be appropriate to the size, scope, and complexity of the pilot school's operations and must be described in the quality manual required by this part.

(i) *QMS Accountable Manager.* Designation of an Accountable Manager who has the authority and responsibility for the implementation, maintenance, and continued effectiveness of the Quality Management System (QMS). The Accountable Manager must have sufficient authority over resources and personnel to ensure compliance with this part.

(ii) *Chief instructor.* Designation of the chief instructor's roles, responsibilities, and decision-making authority with respect to participation in the Quality Management System. The pilot school must define, in its Quality Manual as required in paragraph (b)(1)(ii) of this part, the scope of the chief instructor's authority to review, evaluate, approve, modify, or reject training-related actions arising from QMS outputs.

(iii) *Combination of roles.* The Accountable Manager and the chief instructor may be the same individual, provided that the pilot school defines in its Quality Manual how the combined roles are exercised to ensure effective implementation and oversight of the Quality Management System.

(iv) *Internal audit function.* The pilot school must ensure that personnel conducting internal audits of the Quality Management System are independent of the activities being audited, to the extent practicable.

(v) *Management review participation.* The pilot school must define, in its Quality Manual as required by this part, the required participants in QMS management reviews. At a minimum, management reviews must include participation by the Accountable Manager and appropriate training leadership.

(3) *Processes and Monitoring.* Identification, documentation, and monitoring of the principal training and support processes necessary to ensure compliance with this part. The school must establish defined performance indicators and monitor process effectiveness at defined intervals to identify adverse trends, nonconformities, and opportunities for improvement;

(4) *Personnel Competence.* Procedures to ensure that personnel performing duties under this part are competent, appropriately trained, and qualified for their assigned responsibilities;

(5) *Corrective Action and Continuous Improvement.* A documented process to identify nonconformities, determine root causes, implement corrective and preventive actions, verify the effectiveness of those actions, and use QMS performance data to drive continuous improvement of training quality and regulatory compliance;

(6) *Internal Audits.* Periodic internal audits of training and support processes to verify conformity with documented procedures, regulatory requirements, and the QMS. Audit results must be documented, communicated to responsible personnel, and used to support corrective action and continuous improvement; and

(7) *Management Review.* An annual, documented management review of the QMS to evaluate its continuing suitability, adequacy, and effectiveness. Management review outputs must include documented decisions and actions related to improvement, corrective actions, and resource needs.

(c) Quality Management System (QMS) Qualification. The QMS will be qualified using a two-tier system based on the structure and demonstrated effectiveness of the system:

(1) Tier 1: Structural Compliance. To qualify for tier 1, a school must demonstrate to the Administrator that:

(i) All required QMS elements listed in paragraph (b) are documented and planned; and

(ii) Required personnel have been assigned and trained;

(2) Tier 2: Performance and Effectiveness. To qualify for tier 2, a school must demonstrate to the Administrator that its QMS is functioning effectively in practice. Tier 2 qualification, applied for and authorized by the CMO, requires evidence that:

(i) All required QMS elements listed in paragraph (b) are documented and planned;

(ii) Required personnel have been assigned and trained;

(iii) Documented processes are consistently followed;

(iv) Internal audits are conducted and audit findings have been addressed;

(v) Corrective actions are implemented, tracked, verified, and closed;

(vi) Process monitoring results are used to identify trends and opportunities for improvement;

(vii) Management reviews assess QMS performance and recommendations are documented; and

(viii) The school demonstrates the ability to self-identify systemic issues and correct them proactively.

§ 141.85 Chief instructor responsibilities.

(a) A chief instructor designated for a pilot school ~~or provisional pilot school~~ is responsible for:

(1) Certifying each student's training record, graduation certificate, stage check and end-of-course test reports, and recommendation for course completion, unless the duties are delegated by the chief instructor to an assistant chief instructor or ~~recommending instructor~~ designee;

(2) Ensuring that each certificated flight instructor, certificated ground instructor, airline transport pilot certification training program instructor, airline transport pilot

enhanced qualification program instructor, or commercial pilot with a lighter-than-air rating passes an initial proficiency check prior to that instructor being assigned instructing duties in the school's approved training course, and thereafter that the instructor passes a recurrent proficiency check every 12 calendar months after the month in which the initial test was accomplished;

(3) Ensuring that each student accomplishes the required stage checks and end-of-course tests in accordance with the school's approved training course; ~~and~~

(4) Maintaining training techniques, procedures, and standards for the school that are acceptable to the Administrator-;

(5) Participating in the pilot school's Quality Management System by supporting internal audits, reviewing training-related findings and performance data, and evaluating, approving, modifying, or rejecting proposed actions within the chief instructor's authority arising from QMS outputs; and

(6) Participating in and supporting the pilot school's Safety Management System (SMS) by reviewing safety-related information relevant to training that is made available through the SMS, and evaluating, approving, modifying, or rejecting proposed safety-related actions within the chief instructor's authority arising from SMS outputs.

(b) The chief instructor or an assistant chief instructor must be available at the pilot school or, if away from the pilot school, be available by telephone, radio, or other electronic means during the time that training is given for an approved training course.

(c) The chief instructor may delegate authority for conducting stage checks, end-of-course tests, and flight instructor proficiency checks to the assistant chief instructor or a check instructor.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997; Amdt. 141-12, 74 FR 42564, Aug. 21, 2009]

§ 141.87 Change of chief instructor.

Whenever a pilot school ~~or provisional pilot school~~ makes a change of designation of its chief instructor, that school:

(a) Must immediately provide the FAA ~~responsible Flight Standards~~ Central Management Office ~~in which the school is located with written~~ notification of the change;

(b) May conduct training without a chief instructor for that training course for a period not to exceed 60 days while awaiting the designation and approval of another chief instructor;

(c) May, for a period not to exceed 60 days, have the stage checks and end-of-course tests administered by:

(1) The training course's assistant chief instructor, if one has been designated;

(2) The training course's check instructor, if one has been designated;

(3) An FAA inspector; ~~or~~

- (4) An examiner; ~~or~~
(5) An individual authorized to conduct such tests under an Organization Designation Authorization (ODA), acting within the scope of that authorization.
- (d) ~~Must, after 60 days without a chief instructor, cease operations and surrender its certificate to the Administrator; and~~ If a pilot school does not have a designated chief instructor for more than 60 consecutive days, the pilot school must notify the Administrator and document, within its Quality Management System, the measures taken to ensure continued training oversight, standardization, and evaluation. Based on the pilot school's demonstrated controls, risk profile, and compliance history, the Administrator may permit continued operations, impose operational limitations, or require the pilot school to cease some or all training operations.
- (e) A pilot school that has ceased or had its operations limited under paragraph (d) of this section ~~May~~ may have its certificate ~~or its operating privileges~~ reinstated, upon:
- (1) Designating and approving another chief instructor;
 - (2) Showing it meets the requirements of § 141.27(a)(2)83 of this part; and
 - (3) Applying for reinstatement ~~on a form and~~ in a manner prescribed by the Administrator.

[Docket 25910, 62 FR 16347, Apr. 4, 1997, as amended by Docket FAA-2018-0119, Amdt. 141-19, 83 FR 9176, Mar. 5, 2018]

§ 141.89 Maintenance of personnel, facilities, and equipment.

The holder of a pilot school certificate ~~or provisional pilot school certificate~~ may not provide training to a student who is enrolled in an approved course of training unless:

- (a) Each ~~airport~~, aircraft, and facility necessary for that training meets the standards specified in the holder's ~~approved training course outline~~ Pilot Training Management Manual (PTMM) and the appropriate requirements of this part; and
- (b) Except as provided in § 141.87 of this part, each chief instructor, assistant chief instructor, check instructor, or instructor meets the qualifications specified in the holder's approved course of training and the appropriate requirements of this part.

§ 141.91 Satellite bases.

The holder of a pilot school certificate ~~or provisional pilot school certificate~~ may conduct ground training or flight training in an approved course of training at a base other than its main operations base if:

- ~~(a) An assistant chief instructor is designated for each satellite base, and that assistant chief instructor is available at that base or, if away from the premises, by telephone, radio, or other electronic means during the time that training is provided for an approved training course;~~

- (~~ba~~) The ~~airport~~, facilities, and personnel used at the satellite base meet the appropriate requirements of subpart B of this part and its approved Pilot Training Management Manual (PTMM) training course outline;
- (~~eb~~) The instructors are under the direct supervision of the chief instructor or assistant chief instructor for the appropriate training course, who is readily available for consultation in accordance with § 141.85(b) of this part; and
- (~~dc~~) The ~~responsible Flight Standards office for the area in which the school is located~~ FAA 141 Central Management Office (CMO) is notified ~~in writing~~ if training is conducted at a base other than the school's main operations base for more than 7 consecutive days.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997, as amended by Docket FAA-2018-0119, Amdt. 141-19, 83 FR 9175, Mar. 5, 2018]

§ 141.93 Enrollment.

- (a) The holder of a pilot school certificate ~~or a provisional pilot school certificate~~ must, at the time a student is enrolled in an approved training course, furnish that student with a copy of or electronic access to of the following:
- (1) ~~A certificate of enrollment containing—~~
 - (i) ~~The name of the course in which the student is enrolled; and~~
 - (ii) ~~The date of that enrollment.~~
 - (2) ~~A copy of (1) The student's training syllabus;~~
 - (2) The Pilot Training Management Manual (PTMM); and-
 - (3) The students training course outline.
 - (3) ~~Except for a training course offered through an internet based medium, a copy of the safety procedures and practices developed by the school that describe the use of the school's facilities and the operation of its aircraft. Those procedures and practices shall include training on at least the following information—~~
 - (i) ~~The weather minimums required by the school for dual and solo flights;~~
 - (ii) ~~The procedures for starting and taxiing aircraft on the ramp;~~
 - (iii) ~~Fire precautions and procedures;~~
 - (iv) ~~Redispatch procedures after unprogrammed landings, on and off airports;~~
 - (v) ~~Aircraft discrepancies and approval for return-to-service determinations;~~
 - (vi) ~~Securing of aircraft when not in use;~~
 - (vii) ~~Fuel reserves necessary for local and cross-country flights;~~
 - (viii) ~~Avoidance of other aircraft in flight and on the ground;~~
 - (ix) ~~Minimum altitude limitations and simulated emergency landing instructions; and~~
 - (x) ~~A description of and instructions regarding the use of assigned practice areas.~~
- (b) The holder of a pilot school certificate ~~or provisional pilot school certificate~~ must maintain a monthly listing of persons enrolled in each training course offered by the school.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997; Amdt. 141-15, 76 FR 54107, Aug. 31, 2011]

§ 141.95 Graduation certificate.

- (a) The holder of a pilot school certificate ~~or provisional pilot school certificate~~ must issue a graduation certificate to each student who completes its approved course of training.
- (b) The graduation certificate must be issued to the student upon completion of the course of training and contain at least the following information:
- (1) The name of the school and the certificate number of the school;
 - (2) The name of the graduate to whom it was issued;
 - (3) The course of training for which it was issued;
 - (4) The date of graduation;
 - (5) A statement that the student has satisfactorily completed each required stage of the approved course of training including the tests for those stages;
 - (6) A certification of the information contained on the graduation certificate by the chief instructor for that course of training; and
 - ~~(7) A statement showing the cross-country training that the student received in the course of training.~~
 - ~~(8)~~ Certificates issued upon graduating from a course based on internet media must be uniquely identified using an alphanumeric code that is specific to the student graduating from that course.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997, as amended by Amdt. 141-15, 76 FR 54108, Aug. 31, 2011]

Subpart F—Records

§ 141.101 Training records.

- (a) Each holder of a pilot school certificate ~~or provisional pilot school certificate~~ must establish and maintain a current and accurate record of the participation of each student enrolled in an approved course of training conducted by the school that includes the following information:
- (1) The date the student was enrolled in the approved course;
 - (2) A chronological log of the student's course attendance, subjects, and flight operations covered in the student's training, and the names and grades of any tests taken by the student; and
 - (3) The date the student graduated, terminated training, or transferred to another school. In the case of graduation from a course based on internet media, the school must maintain the identifying graduation certificate code required by § 141.95(b)(8).
- (b) The records required to be maintained in a student's logbook will not suffice for the record required by paragraph (a) of this section.

(c) Whenever a student graduates, terminates training, or transfers to another school, the student's record must be certified to that effect by the chief instructor or designee.

(d) The holder of a pilot school certificate ~~or a provisional pilot school certificate~~ must retain each student record required by this section for at least 1 year from the date that the student:

- (1) Graduates from the course to which the record pertains;
- (2) Terminates enrollment in the course to which the record pertains; or
- (3) Transfers to another school.

(e) The holder of a pilot school certificate ~~or a provisional pilot school certificate~~ must make a copy of the student's training record available upon request by the student.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997, as amended by Amdt. 141-15, 76 FR 54108, Aug. 31, 2011]

Appendix A to Part 141—~~Recreational-Sport~~ Pilot Certification Course

1. **Applicability.** This appendix prescribes the minimum curriculum required for a ~~recreational-sport~~ pilot certification course under this part, for the following ratings:

- (a) Airplane single-engine.
- ~~(b) Rotorcraft helicopter.~~
- ~~(c) Rotorcraft gyroplane.~~
- ~~(d) Weight-shift-control aircraft.~~
- ~~(e) Powered parachute.~~
- e. Glider
- f. Lighter-than-air – Balloon
- g. Lighter-than-air - Airship

2. **Eligibility for enrollment.** A person must hold a student pilot certificate prior to enrolling in the flight portion of the ~~recreational-sport~~ pilot certification course.

3. **Aeronautical knowledge training.** Each approved course must include at least ~~20~~ 10 hours of ground training ~~on-in~~ the ~~following~~ aeronautical knowledge areas specified in the applicable Sport Pilot Airman Certification Standards (ACS), appropriate to the aircraft category and class for which the course applies:

- ~~(a) Applicable Federal Aviation Regulations for recreational pilot privileges, limitations, and flight operations;~~
- ~~(b) Accident reporting requirements of the National Transportation Safety Board;~~
- ~~(c) Applicable subjects in the “Aeronautical Information Manual” and the appropriate FAA advisory circulars;~~
- ~~(d) Use of aeronautical charts for VFR navigation using pilotage with the aid of a magnetic compass;~~

- ~~(e) Recognition of critical weather situations from the ground and in flight, windshear avoidance, and the procurement and use of aeronautical weather reports and forecasts;~~
- ~~(f) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence;~~
- ~~(g) Effects of density altitude on takeoff and climb performance;~~
- ~~(h) Weight and balance computations;~~
- ~~(i) Principles of aerodynamics, powerplants, and aircraft systems;~~
- ~~(j) Stall awareness, spin entry, spins, and spin recovery techniques, if applying for an airplane single-engine rating;~~
- ~~(k) Aeronautical decision making and judgment; and~~
- ~~(l) Preflight action that includes —~~
 - ~~(1) How to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements; and~~
 - ~~(2) How to plan for alternatives if the planned flight cannot be completed or delays are encountered.~~

4. *Flight training.* Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, the following requirements apply:

- ~~(a) Each approved course must include at least 30 hours of flight training (of which 15 hours must be with a certificated flight instructor and 3 hours must be solo flight training as provided in section No. 5 of this appendix) on the approved areas of operation listed in paragraph (e) of this section that are appropriate to the aircraft category and class rating for which the course applies, including:~~
 - ~~(1) Except as provided in § 61.100 of this chapter, 2 hours of dual flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with at least three takeoffs and three landings; and~~
 - ~~(2) 3 hours of dual flight training in an aircraft that is appropriate to the aircraft category and class for which the course applies, in preparation for the practical test within 60 days preceding the date of the test.~~
- ~~(b) Each training flight must include a preflight briefing and a postflight critique of the student by the flight instructor assigned to that flight.~~
- ~~(c) Flight training must include the following approved areas of operation appropriate to the aircraft category and class rating —~~
 - ~~(1) **For an airplane single-engine course:**~~
 - ~~(i) Preflight preparation;~~
 - ~~(ii) Preflight procedures;~~
 - ~~(iii) Airport operations;~~
 - ~~(iv) Takeoffs, landings, and go-arounds;~~
 - ~~(v) Performance maneuvers;~~

- ~~(vi) Ground reference maneuvers;~~
- ~~(vii) Navigation;~~
- ~~(viii) Slow flight and stalls;~~
- ~~(ix) Emergency operations; and~~
- ~~(x) Postflight procedures.~~

~~(2) ***For a rotorcraft helicopter course:***~~

- ~~(i) Preflight preparation;~~
- ~~(ii) Preflight procedures;~~
- ~~(iii) Airport and heliport operations;~~
- ~~(iv) Hovering maneuvers;~~
- ~~(v) Takeoffs, landings, and go-arounds;~~
- ~~(vi) Performance maneuvers;~~
- ~~(vii) Navigation;~~
- ~~(viii) Emergency operations; and~~
- ~~(ix) Postflight procedures.~~

~~(3) ***For a rotorcraft gyroplane course:***~~

- ~~(i) Preflight preparation;~~
- ~~(ii) Preflight procedures;~~
- ~~(iii) Airport operations;~~
- ~~(iv) Takeoffs, landings, and go-arounds;~~
- ~~(v) Performance maneuvers;~~
- ~~(vi) Ground reference maneuvers;~~
- ~~(vii) Navigation;~~
- ~~(viii) Flight at slow airspeeds;~~
- ~~(ix) Emergency operations; and~~
- ~~(x) Postflight procedures.~~

(a) **For an airplane single-engine land or sea course:** 20 hours of flight time in a single-engine airplane. This flight time must include at least 15 hours of flight training from an authorized instructor and at least 5 hours of solo flight training in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:

- (1) At least 2 hours of cross-country flight training;
- (2) Ten takeoffs and ten landings to a full stop at an airport, with each landing involving a flight in the traffic pattern;
- (3) One solo cross-country flight of at least 75 nautical miles total distance, with a full-stop landing at a minimum of two points and with one segment of the flight consisting of a straight-line distance of at least 25 nautical miles between the takeoff and landing locations; and
- (4) At least 2 hours of flight training with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards

(ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.

(b) **For a glider course where the applicant has not logged 20 hours in heavier-than-air aircraft:** 20 hours of flight time in a heavier-than-air aircraft and must have logged at least 10 hours of flight time in a glider. This time must include 10 flights in a glider receiving flight training from an authorized instructor and at least 2 hours of solo flight training in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:

1. Five solo launches and landings; and

(2) At least 3 training flights with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.

(c) **For a glider course where the applicant has logged 20 hours in heavier-than-air aircraft:** 3 hours of flight time in a glider. This time must include 5 flights in a glider receiving flight training from an authorized instructor and at least 1 hour of solo flight training in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:

(1) Three solo launches and landings; and

(2) At least 3 training flights with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.

(d) **For a gyroplane course:** 20 hours of flight time in a gyroplane. This time must include at least 15 hours of flight training from an authorized instructor in a gyroplane and at least 5 hours of solo flight training in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:

(1) At least 2 hours of cross-country flight training;

(2) Ten takeoffs and ten landings to a full stop at an airport, with each landing involving a flight in the traffic pattern;

(3) One solo cross-country flight of at least 50 nautical miles total distance, with a full-stop landing at a minimum of two points and with one segment of the flight consisting of a straight-line distance of at least 25 nautical miles between the takeoff and landing locations; and

(4) At least 2 hours of flight training with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards

(ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.

(e) **For a lighter-than-air, airship course:** 20 hours of flight time in an airship. This time must include at least 15 hours of flight training from an authorized instructor in an airship and at least 3 hours performing the duties of pilot-in-command in an airship with an authorized instructor in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:

- (1) At least 2 hours of cross-country flight training;
- (2) Three takeoffs and three landings to a full stop (each landing involving a flight in the traffic pattern) at an airport;
- (3) One cross-country flight of at least 25 nautical miles between the takeoff and landing locations; and
- (4) At least 2 hours of flight training with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.

(f) **For a lighter-than-air, balloon course:** 7 hours of flight time in a balloon. This time must include three flights with an authorized instructor and one flight performing the duties of pilot-in-command in a balloon with an authorized instructor in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:

- (1) At least 2 hours of cross-country flight training; and
- (2) At least 1 hour of flight training with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.

(g) **For a powered parachute course:** 12 hours of flight time in a powered parachute. This time must include at least 10 hours of flight training from an authorized instructor in a powered parachute and at least 2 hours of solo flight training in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:

- (1) At least 1 hour of cross-country flight training;
- (2) Twenty takeoffs and landings to a full stop in a powered parachute, with each landing involving a flight in the traffic pattern at an airport;
- (3) Ten solo takeoffs and landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport;
- (4) One solo flight with a landing at a different airport and with one segment of the flight consisting of a straight-line distance of at least 10 nautical miles between the takeoff and landing locations; and

(5) At least 1 hour of flight training with an authorized instructor on the areas of operation specified in § 61.311 in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.

(h) For a weight-shift-control aircraft course: 20 hours of flight time in a weight-shift-control aircraft. This time must include at least 15 hours of flight training from an authorized instructor in a weight-shift-control aircraft and at least 5 hours of solo flight training in the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS). The aeronautical experience must include:

(1) At least 2 hours of cross-country flight training;

(2) Ten takeoffs and ten landings to a full stop at an airport, with each landing involving a flight in the traffic pattern;

(3) One solo cross-country flight of at least 50 nautical miles total distance, with a full-stop landing at a minimum of two points and with one segment of the flight consisting of a straight-line distance of at least 25 nautical miles between the takeoff and landing locations; and

(4) At least 2 hours of flight training with an authorized instructor on the areas of operation specified in the applicable Sport Pilot Airman Certification Standards (ACS) in preparation for the practical test, completed within the preceding 2 calendar months from the month of the test.

~~5. **Solo flight training.** Each approved course must include at least 3 hours of solo flight training on the approved areas of operation listed in paragraph (c) of section No. 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies.~~

5. Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for use of Flight Simulation Training Devices (FSTDs):

(a) The course may include training in a full flight simulator (FFS), flight training device (FTD), Enhanced Advanced Aviation Training Device (EAATD), Advanced Aviation Training Device (AATD), Basic Aviation Training Device (BATD), or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, is representative of the aircraft for which the course is approved, and the training is given by an authorized instructor.

(b) Training in a Full Flight Simulator (FFS) that meets the requirements of § 141.41(a) may be credited for a maximum of 40 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(c) Training in a Flight Training Device (FTD) Level 6 or Level 7 that meets the requirements of § 141.41(a) may be credited for a maximum of 35 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(d) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 30 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(e) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(f) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(g) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 5 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(h) Training in the devices described in paragraphs (b) through (g) of this section, if used in combination, may not exceed 40 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, unless otherwise specifically authorized by the Administrator.

6. *Stage checks and end-of-course tests.*

(a) Each student enrolled in a ~~sportrecreational~~ pilot course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (c) of section No. 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies.

(b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997]

Appendix B to Part 141—Private Pilot Certification Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for a private pilot certification course required under this part, for the following ratings:

- (a) Airplane single-engine.
- (b) Airplane multiengine.

- (c) Rotorcraft helicopter.
- (d) Rotorcraft gyroplane.
- (e) Powered-lift.
- (f) Glider.
- (g) Lighter-than-air airship.
- (h) Lighter-than-air balloon.

2. ***Eligibility for enrollment.*** A person must hold either a recreational pilot certificate, sport pilot certificate, or student pilot certificate before enrolling in the solo flight phase of the private pilot certification course.

3. ***Aeronautical knowledge training.***

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, ~~Each each~~ approved course must include ~~at least the following~~ ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the aircraft category and class rating:

- (1) 35 hours of training if the course is for an airplane, rotorcraft, or powered-lift category rating.
- (2) 15 hours of training if the course is for a glider category rating.
- (3) 10 hours of training if the course is for a lighter-than-air category with a balloon class rating.
- (4) 35 hours of training if the course is for a lighter-than-air category with an airship class rating.

(b) Ground training must include the ~~following~~ aeronautical knowledge areas specified in:

- (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or.
- (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.~~Applicable Federal Aviation Regulations for private pilot privileges, limitations, and flight operations;~~
- (2) ~~Accident reporting requirements of the National Transportation Safety Board;~~
- (3) ~~Applicable subjects of the "Aeronautical Information Manual" and the appropriate FAA advisory circulars;~~
- (4) ~~Aeronautical charts for VFR navigation using pilotage, dead reckoning, and navigation systems;~~
- (5) ~~Radio communication procedures;~~
- (6) ~~Recognition of critical weather situations from the ground and in flight, windshear avoidance, and the procurement and use of aeronautical weather reports and forecasts;~~

- ~~(7) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence;~~
- ~~(8) Effects of density altitude on takeoff and climb performance;~~
- ~~(9) Weight and balance computations;~~
- ~~(10) Principles of aerodynamics, powerplants, and aircraft systems;~~
- ~~(11) If the course of training is for an airplane category or glider category rating, stall awareness, spin entry, spins, and spin recovery techniques;~~
- ~~(12) Aeronautical decision making and judgment; and~~
- ~~(13) Preflight action that includes—~~
 - ~~(i) How to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements; and~~
 - ~~(ii) How to plan for alternatives if the planned flight cannot be completed or delays are encountered.~~

4. **Flight training.**

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each approved course must include at least the following flight training, as provided in this section and section No. 5 of this appendix, on the approved areas of operation listed in paragraph (d) of this section, appropriate to the aircraft category and class rating:
 - (1) 35 hours of training if the course is for an airplane, rotorcraft, powered-lift, or airship rating.
 - (2) 6 hours of training if the course is for a glider rating.
 - (3) 8 hours of training if the course is for a balloon rating.
- (b) Each approved course must include at least the following flight training:
 - (1) ***For an airplane single-engine course:*** 20 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d)(+) of this section that includes at least—
 - (i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a single-engine airplane;
 - (ii) 3 hours of night flight training in a single-engine airplane that includes—
 - (A) One cross-country flight of more than 100-nautical-miles total distance; and
 - (B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
 - (iii) Three hours of flight training in a single-engine airplane on the control and maneuvering of a single-engine airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; ~~and~~

~~(iv) 3 hours of flight training in a single-engine airplane in preparation for the practical test within 60 days preceding the date of the test.~~

(2) ***For an airplane multiengine course:*** 20 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d)(2) of this section that includes at least—

(i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a multiengine airplane;

(ii) 3 hours of night flight training in a multiengine airplane that includes—

(A) One cross-country flight of more than 100-nautical-miles total distance; and

(B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and

(iii) Three hours of flight training in a multiengine airplane on the control and maneuvering of a multiengine airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and

~~(iv) 3 hours of flight training in a multiengine airplane in preparation for the practical test within 60 days preceding the date of the test.~~

(3) ***For a rotorcraft helicopter course:*** 20 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d)(3) of this section that includes at least—

(i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a helicopter.

(ii) 3 hours of night flight training in a helicopter that includes—

(A) One cross-country flight of more than 50-nautical-miles total distance; and

(B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

~~(iii) 3 hours of flight training in a helicopter in preparation for the practical test within 60 days preceding the date of the test.~~

(4) ***For a rotorcraft gyroplane course:*** 20 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d)(4) of this section that includes at least—

(i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a gyroplane.

(ii) 3 hours of night flight training in a gyroplane that includes—

(A) One cross-country flight over 50-nautical-miles total distance; and

(B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

~~(iii) 3 hours of flight training in a gyroplane in preparation for the practical test within 60 days preceding the date of the test.~~

(5) ***For a powered-lift course:*** 20 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d)(5) of this section that includes at least—

(i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a powered-lift;

(ii) 3 hours of night flight training in a powered-lift that includes—

(A) One cross-country flight of more than 100-nautical-miles total distance; and

(B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.; ***and***

(iii) Three hours of flight training in a powered-lift on the control and maneuvering of a powered-lift solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.; ***and***

~~(iv) 3 hours of flight training in a powered-lift in preparation for the practical test, within 60 days preceding the date of the test.~~

(6) ***For a glider course:*** 4 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d)(6) of this section that includes at least—

(i) Five training flights in a glider with a certificated flight instructor on the launch/tow procedures approved for the course and on the appropriate approved areas of operation listed in paragraph (d)(6) of this section; and

(ii) Three training flights in a glider with a certificated flight instructor in preparation for the practical test within 60 days preceding the date of the test.

(7) ***For a lighter-than-air airship course:*** 20 hours of flight training from a commercial pilot with an airship rating on the approved areas of operation in paragraph (d)(7) of this section that includes at least—

(i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in an airship;

(ii) 3 hours of night flight training in an airship that includes—

(A) One cross-country flight over 25-nautical-miles total distance; and

(B) Five takeoffs and five landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(iii) 3 hours of instrument training in an airship.; ***and***

~~(iv) 3 hours of flight training in an airship in preparation for the practical test within 60 days preceding the date of the test.~~

(8) ***For a lighter-than-air balloon course:*** 8 hours of flight training, including at least five training flights, from a commercial pilot with a balloon rating on the approved areas of operation in paragraph (d)(8) of this section, that includes—

(i) If the training is being performed in a gas balloon—

(A) Two flights of 1 hour each;

(B) One flight involving a controlled ascent to 3,000 feet above the launch site; and

(C) Two flights in preparation for the practical test within 60 days preceding the date of the test.

(ii) If the training is being performed in a balloon with an airborne heater—

(A) Two flights of 30 minutes each;

(B) One flight involving a controlled ascent to 2,000 feet above the launch site; and

(C) Two flights in preparation for the practical test within 60 days preceding the date of the test.

(c) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, For use of full flight Flight simulators or flight training devicesSimulation Training Devices (FSTDs):

(1) The course may include training in a full flight simulator ~~or~~, flight training device, Enhanced Advanced Aviation Training Device (EAATD), aviation training device, or extended reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, it is representative of the aircraft for which the course is approved, ~~meets the requirements of this paragraph,~~ and the training is given by an authorized instructor.

(2) Training in a full flight simulator (FFS) that meets the requirements of § 141.41(a) may be credited for a maximum of ~~20-65~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(3) Training in a flight training device (FTD) Level 6 or Level 7 that meets the requirements of § 141.41(a) may be credited for a maximum of ~~15-60~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a

maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(48) Training in ~~full flight simulators or flight training devices~~ Flight Simulation Training Devices (FSTDs) described in paragraphs (c)(2) ~~and through (37)~~ of this section, if used in combination, may be credited for a maximum of ~~20-65~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. ~~However, credit for training in a flight training device that meets the requirements of § 141.41(a) cannot exceed the limitation provided for in paragraph (c)(3) of this section.~~

(d) Each approved course must include the flight training on the approved areas of operation ~~listed in this paragraph that are appropriate to the aircraft category and class rating—~~

(1) Specified in the Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or

(2) Specified in a consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

~~(1) For a single-engine airplane course:~~

- ~~(i) Preflight preparation;~~
- ~~(ii) Preflight procedures;~~
- ~~(iii) Airport and seaplane base operations;~~
- ~~(iv) Takeoffs, landings, and go-arounds;~~
- ~~(v) Performance maneuvers;~~
- ~~(vi) Ground reference maneuvers;~~
- ~~(vii) Navigation;~~
- ~~(viii) Slow flight and stalls;~~
- ~~(ix) Basic instrument maneuvers;~~
- ~~(x) Emergency operations;~~
- ~~(xi) Night operations, and~~
- ~~(xii) Postflight procedures.~~

~~(2) **For a multiengine airplane course:**~~

- ~~(i) Preflight preparation;~~
- ~~(ii) Preflight procedures;~~
- ~~(iii) Airport and seaplane base operations;~~
- ~~(iv) Takeoffs, landings, and go-arounds;~~
- ~~(v) Performance maneuvers;~~
- ~~(vi) Ground reference maneuvers;~~
- ~~(vii) Navigation;~~
- ~~(viii) Slow flight and stalls;~~
- ~~(ix) Basic instrument maneuvers;~~
- ~~(x) Emergency operations;~~
- ~~(xi) Multiengine operations;~~
- ~~(xii) Night operations; and~~
- ~~(xiii) Postflight procedures.~~

~~(3) **For a rotorcraft helicopter course:**~~

- ~~(i) Preflight preparation;~~
- ~~(ii) Preflight procedures;~~
- ~~(iii) Airport and heliport operations;~~
- ~~(iv) Hovering maneuvers;~~
- ~~(v) Takeoffs, landings, and go-arounds;~~
- ~~(vi) Performance maneuvers;~~
- ~~(vii) Navigation;~~
- ~~(viii) Emergency operations;~~
- ~~(ix) Night operations; and~~
- ~~(x) Postflight procedures.~~

~~(4) **For a rotorcraft gyroplane course:**~~

- ~~(i) Preflight preparation;~~
- ~~(ii) Preflight procedures;~~
- ~~(iii) Airport operations;~~
- ~~(iv) Takeoffs, landings, and go-arounds;~~
- ~~(v) Performance maneuvers;~~
- ~~(vi) Ground reference maneuvers;~~
- ~~(vii) Navigation;~~
- ~~(viii) Flight at slow airspeeds;~~
- ~~(ix) Emergency operations;~~
- ~~(x) Night operations; and~~
- ~~(xi) Postflight procedures.~~

~~(5) **For a powered-lift course:**~~

- ~~(i) Preflight preparation;~~
- ~~(ii) Preflight procedures;~~

- ~~(iii) Airport and heliport operations;~~
- ~~(iv) Hovering maneuvers;~~
- ~~(v) Takeoffs, landings, and go-arounds;~~
- ~~(vi) Performance maneuvers;~~
- ~~(vii) Ground reference maneuvers;~~
- ~~(viii) Navigation;~~
- ~~(ix) Slow flight and stalls;~~
- ~~(x) Basic instrument maneuvers;~~
- ~~(xi) Emergency operations;~~
- ~~(xii) Night operations; and~~
- ~~(xiii) Postflight procedures.~~
- ~~(6) ***For a glider course:***~~
 - ~~(i) Preflight preparation;~~
 - ~~(ii) Preflight procedures;~~
 - ~~(iii) Airport and gliderport operations;~~
 - ~~(iv) Launches/tows, as appropriate, and landings;~~
 - ~~(v) Performance speeds;~~
 - ~~(vi) Soaring techniques;~~
 - ~~(vii) Performance maneuvers;~~
 - ~~(viii) Navigation;~~
 - ~~(ix) Slow flight and stalls;~~
 - ~~(x) Emergency operations; and~~
 - ~~(xi) Postflight procedures.~~
- ~~(7) ***For a lighter-than-air airship course:***~~
 - ~~(i) Preflight preparation;~~
 - ~~(ii) Preflight procedures;~~
 - ~~(iii) Airport operations;~~
 - ~~(iv) Takeoffs, landings, and go-arounds;~~
 - ~~(v) Performance maneuvers;~~
 - ~~(vi) Ground reference maneuvers;~~
 - ~~(vii) Navigation;~~
 - ~~(viii) Emergency operations; and~~
 - ~~(ix) Postflight procedures.~~
- ~~(8) ***For a lighter-than-air balloon course:***~~
 - ~~(i) Preflight preparation;~~
 - ~~(ii) Preflight procedures;~~
 - ~~(iii) Airport operations;~~
 - ~~(iv) Launches and landings;~~
 - ~~(v) Performance maneuvers;~~
 - ~~(vi) Navigation;~~

~~(vii) Emergency operations; and~~

~~(viii) Postflight procedures.~~

5. **Solo flight training.** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each—each approved course must include at least the following solo flight training:

(a) **For an airplane single-engine course:** 5 hours of solo flight training in a single-engine airplane on the approved areas of operation in paragraph (d)(+) of section No. 4 of this appendix that includes at least—

(1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations; and

(2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(b) **For an airplane multiengine course:** 5 hours of flight training in a multiengine airplane performing the duties of a pilot-in-command while under the supervision of a certificated flight instructor. The training must consist of the approved areas of operation in paragraph (d)(2) of section No. 4 of this appendix, and include at least—

(1) One 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations; and

(2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(c) **For a rotorcraft helicopter course:** 5 hours of solo flight training in a helicopter on the approved areas of operation in paragraph (d)(3) of section No. 4 of this appendix that includes at least—

(1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 25 nautical miles between the takeoff and landing locations; and

(2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(d) **For a rotorcraft gyroplane course:** 5 hours of solo flight training in gyroplanes on the approved areas of operation in paragraph (d)(4) of section No. 4 of this appendix that includes at least—

(1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 25 nautical miles between the takeoff and landing locations; and

(2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(e) ***For a powered-lift course:*** 5 hours of solo flight training in a powered-lift on the approved areas of operation in paragraph (d)~~(5)~~ of section No. 4 of this appendix that includes at least—

(1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations; and

(2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(f) ***For a glider course:*** Two solo flights in a glider on the approved areas of operation in paragraph (d)~~(6)~~ of section No. 4 of this appendix, and the launch and tow procedures appropriate for the approved course.

(g) ***For a lighter-than-air airship course:*** 5 hours of flight training in an airship performing the duties of pilot-in-command while under the supervision of a commercial pilot with an airship rating. The training must consist of the approved areas of operation in paragraph (d)~~(7)~~ of section No. 4 of this appendix.

(h) ***For a lighter-than-air balloon course:*** Two solo flights in a balloon with an airborne heater if the course involves a balloon with an airborne heater or, if the course involves a gas balloon, at least two flights in a gas balloon performing the duties of pilot-in-command while under the supervision of a commercial pilot with a balloon rating. The training must consist of the approved areas of operation in paragraph (d)~~(8)~~ of section No. 4 of this appendix, in the kind of balloon for which the course applies.

6. *Stage checks and end-of-course tests.*

(a) Each student enrolled in a private pilot course must satisfactorily accomplish the stage checks and end-of-course tests in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (d) of section No. 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies.

(b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40908, July 30, 1997, as amended by Amdt. 141-10, 63 FR 20289, Apr. 23, 1998; Amdt. 141-12, 74 FR 42564, Aug. 21, 2009; Docket FAA-2015-1846, Amdt. 141-18, 81 FR 21460, Apr. 12, 2016]

Appendix C to Part 141—Instrument Rating Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for an instrument rating course and an additional instrument rating course, required under this part, for the following ratings:

(a) Instrument—airplane.

(b) Instrument—helicopter.

(c) Instrument—powered-lift.

2. **Eligibility for enrollment.** A person must hold at least a private pilot certificate with an aircraft category and class rating appropriate to the instrument rating for which the course applies prior to enrolling in the flight portion of the instrument rating course.

3. **Aeronautical knowledge training.**

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each approved course must include at least the following ground training on the aeronautical knowledge areas ~~listed~~ referenced in paragraph (b) of this section appropriate to the instrument rating for which the course applies:

- (1) 30 hours of training if the course is for an initial instrument rating.
- (2) 20 hours of training if the course is for an additional instrument rating.

(b) Ground training must include the ~~following~~ aeronautical knowledge areas:

- (1) ~~Applicable Federal Aviation Regulations for IFR flight operations; Specified in the Airman Certification Standards (ACS) appropriate to the instrument rating for which the course applies; or~~
- (2) Specified in a consensus standard that has been accepted by the Administrator, appropriate to the instrument rating for which the course applies. Appropriate information in the “Aeronautical Information Manual”;
- (3) ~~Air traffic control system and procedures for instrument flight operations;~~
- (4) ~~IFR navigation and approaches by use of navigation systems;~~
- (5) ~~Use of IFR en-route and instrument approach procedure charts;~~
- (6) ~~Procurement and use of aviation weather reports and forecasts, and the elements of forecasting weather trends on the basis of that information and personal observation of weather conditions;~~
- (7) ~~Safe and efficient operation of aircraft under instrument flight rules and conditions;~~
- (8) ~~Recognition of critical weather situations and windshear avoidance;~~
- (9) ~~Aeronautical decision making and judgment; and~~
- (10) ~~Crew resource management, to include crew communication and coordination.~~

4. **Flight training.**

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each approved course must include at least the following flight training on the approved areas of operation ~~listed~~ referenced in paragraph (d) of this section, appropriate to the instrument-aircraft category and class rating for which the course applies:

- (1) 35 hours of instrument training if the course is for an initial instrument rating.
- (2) 15 hours of instrument training if the course is for an additional instrument rating.

(b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Ffor the use of ~~full flight~~

~~simulators, flight training devices, or aviation training devices—~~Flight Simulation Training Devices (FSTDs)-

- (1) The course may include training in a full flight simulator, flight training device, ~~or—~~aviation training device, Enhanced Advanced Aviation Training Device (EAATD), or extended reality (XR) training system, ~~provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, it is~~ representative of the aircraft for which the course is approved, ~~meets the requirements of this paragraph,~~ and the training is given by an authorized instructor.
- (2) Credit for training in a full flight simulator that meets the requirements of § 141.41(a) cannot exceed ~~50-80~~ percent of the total flight training hour requirements of the course or of this section, whichever is less.
- (3) Credit for training in a flight training device Level 6 or Level 7 that meets the requirements of § 141.41(a), ~~an advanced aviation training device that meets the requirements of § 141.41(b), or a combination of these devices~~ cannot exceed ~~40-70~~ percent of the total flight training hour requirements of the course or of this section, whichever is less. ~~Credit for training in a basic aviation training device that meets the requirements of § 141.41(b) cannot exceed 25 percent of the total training hour requirements permitted under this paragraph.~~
- (4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 60 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 40 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(c) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.
- (48) Credit for training in Flight Simulation Training Devices (FSTDs)~~full-flight simulators, flight training devices, and aviation training devices—described in~~

~~paragraphs (b)(2) through (7) of this ifsection, if~~ used in combination, cannot exceed ~~50-80~~ percent of the total flight training hour requirements of the course or of this section, whichever is less. ~~However, credit for training in a flight training device or aviation training device cannot exceed the limitation provided for in paragraph (b)(3) of this section.~~

(c) ~~Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each~~ ~~Each~~ approved course must include the following flight training—

(1) ***For an instrument airplane course:*** Instrument training time from a certificated flight instructor with an instrument rating on the approved areas of operation referenced in paragraph (d) of this section including at least one cross-country flight that—

- (i) Is in the category and class of airplane that the course is approved for, and is performed under IFR;
- (ii) Is a distance of at least 250 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports;
- (iii) Involves an instrument approach at each airport; and
- (iv) Involves three different kinds of approaches with the use of navigation systems.

(2) ***For an instrument helicopter course:*** Instrument training time from a certificated flight instructor with an instrument rating on the approved areas of operation referenced in paragraph (d) of this section including at least one cross-country flight that—

- (i) Is in a helicopter and is performed under IFR;
- (ii) Is a distance of at least 100 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 50 nautical miles between airports;
- (iii) Involves an instrument approach at each airport; and
- (iv) Involves three different kinds of approaches with the use of navigation systems.

(3) ***For an instrument powered-lift course:*** Instrument training time from a certificated flight instructor with an instrument rating on the approved areas of operation referenced in paragraph (d) of this section including at least one cross-country flight that—

- (i) Is in a powered-lift and is performed under IFR;
- (ii) Is a distance of at least 250 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports;
- (iii) Involves an instrument approach at each airport; and

(iv) Involves three different kinds of approaches with the use of navigation systems.

(d) Each course must include flight training on the areas of operation ~~listed~~referenced under this paragraph appropriate to the instrument aircraft category and class rating (if a class rating is appropriate) for which the course applies:

- (1) Areas of operation specified in the Airman Certification Standards (ACS) appropriate to the instrument rating for which the course applies; or Preflight preparation;
- (2) Areas of operation specified in a consensus standard that has been accepted by the Administrator, appropriate to the instrument rating for which the course applies. Preflight procedures;
- ~~(3) Air traffic control clearances and procedures;~~
- ~~(4) Flight by reference to instruments;~~
- ~~(5) Navigation systems;~~
- ~~(6) Instrument approach procedures;~~
- ~~(7) Emergency operations; and~~
- ~~(8) Postflight procedures.~~

5. **Stage checks and end-of-course tests.** Each student enrolled in an instrument rating course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (d) of section No. 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40909, July 30, 1997; Amdt. 141-12, 74 FR 42564, Aug. 21, 2009; Docket FAA-2015-1846, Amdt. 141-18, 81 FR 21460, Apr. 12, 2016]

Appendix D to Part 141—Commercial Pilot Certification Course

1. **Applicability.** This appendix prescribes the minimum curriculum for a commercial pilot certification course required under this part, for the following ratings:

- (a) Airplane single-engine.
- (b) Airplane multiengine.
- (c) Rotorcraft helicopter.
- (d) Rotorcraft gyroplane.
- (e) Powered-lift.
- (f) Glider.
- (g) Lighter-than-air airship.
- (h) Lighter-than-air balloon.

2. **Eligibility for enrollment.** A person must hold the following prior to enrolling in the flight portion of the commercial pilot certification course:

- (a) At least a private pilot certificate; and
- (b) If the course is for a rating in an airplane or a powered-lift category, then the person must:
 - (1) Hold an instrument rating in the aircraft that is appropriate to the aircraft category rating for which the course applies; or
 - (2) Be concurrently enrolled in an instrument rating course that is appropriate to the aircraft category rating for which the course applies, and pass the required instrument rating practical test prior to completing the commercial pilot certification course.

3. *Aeronautical knowledge training.*

- (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, ~~Each each~~ approved course must include at least the following ground training on the aeronautical knowledge areas ~~listed-referenced~~ in paragraph (b) of this section, appropriate to the aircraft category and class rating for which the course applies:
 - (1) 35 hours of training if the course is for an airplane category rating or a powered-lift category rating.
 - (2) 65 hours of training if the course is for a lighter-than-air category with an airship class rating.
 - (3) 30 hours of training if the course is for a rotorcraft category rating.
 - (4) 20 hours of training if the course is for a glider category rating.
 - (5) 20 hours of training if the course is for lighter-than-air category with a balloon class rating.
- (b) Ground training must include the ~~following~~ aeronautical knowledge areas:
 - (1) Specified in the Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or ~~Federal Aviation Regulations that apply to commercial pilot privileges, limitations, and flight operations;~~
 - (2) Specified in a consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies. ~~Accident reporting requirements of the National Transportation Safety Board;~~
 - (3) ~~Basic aerodynamics and the principles of flight;~~
 - (4) ~~Meteorology, to include recognition of critical weather situations, windshear recognition and avoidance, and the use of aeronautical weather reports and forecasts;~~
 - (5) ~~Safe and efficient operation of aircraft;~~
 - (6) ~~Weight and balance computations;~~
 - (7) ~~Use of performance charts;~~
 - (8) ~~Significance and effects of exceeding aircraft performance limitations;~~

- ~~(9) Use of aeronautical charts and a magnetic compass for pilotage and dead reckoning;~~
- ~~(10) Use of air navigation facilities;~~
- ~~(11) Aeronautical decision-making and judgment;~~
- ~~(12) Principles and functions of aircraft systems;~~
- ~~(13) Maneuvers, procedures, and emergency operations appropriate to the aircraft;~~
- ~~(14) Night and high-altitude operations;~~
- ~~(15) Descriptions of and procedures for operating within the National Airspace System; and~~
- ~~(16) Procedures for flight and ground training for lighter-than-air ratings.~~

4. ***Flight training.***

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each approved course must include at least the following flight training, as provided in this section and section No. 5 of this appendix, on the approved areas of operation ~~listed~~ referenced in paragraph (d) of this section that are appropriate to the aircraft category and class rating for which the course applies:

- (1) 120 hours of training if the course is for an airplane or powered-lift rating.
- (2) 155 hours of training if the course is for an airship rating.
- (3) 115 hours of training if the course is for a rotorcraft rating.
- (4) 6 hours of training if the course is for a glider rating.
- (5) 10 hours of training and 8 training flights if the course is for a balloon rating.

(b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each approved course must include at least the following flight training:

(1) ***For an airplane single-engine course:*** 55 hours of flight training from a certificated flight instructor on the approved areas of operation listed in paragraph (d) ~~(1)~~ of this section that includes at least—

- (i) Ten hours of instrument training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must including include attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. A portion of this training may be completed in a Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part. Five hours of the 10 hours required on instrument training must be in a single-engine airplane;
- (ii) Ten hours of training in a complex airplane, a turbine-powered airplane, or a technically advanced airplane that meets the requirements of § 61.129(j) of this chapter, or any combination thereof. The airplane must be appropriate to land or sea for the rating sought;

- (iii) One 2-hour cross country flight in daytime conditions in a single-engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure;
 - (iv) One 2-hour cross country flight in nighttime conditions in a single-engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; and
 - ~~(v) 3 hours in a single-engine airplane in preparation for the practical test within 60 days preceding the date of the test.~~
- (2) ***For an airplane multiengine course:*** 55 hours of flight training from a certificated flight instructor on the approved areas of operation listed in paragraph (d) ~~(2)~~ of this section that includes at least—
- (i) Ten hours of instrument training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must include attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. A portion of this training may be completed in an Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part. Five hours of the 10 hours required on instrument training must be in a multiengine airplane;
 - (ii) 10 hours of training in a multiengine complex or turbine-powered airplane, or any combination thereof;
 - (iii) One 2-hour cross country flight in daytime conditions in a multiengine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; and
 - (iv) One 2-hour cross country flight in nighttime conditions in a multiengine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; ~~and~~
 - ~~(v) 3 hours in a multiengine airplane in preparation for the practical test within 60 days preceding the date of the test.~~
- (3) ***For a rotorcraft helicopter course:*** 30 hours of flight training from a certificated flight instructor on the approved areas of operation listed in paragraph (d) ~~(3)~~ of this section that includes at least—
- (i) Five hours on the control and maneuvering of a helicopter solely by reference to instruments in instrument meteorological conditions or, including using a view-limiting device, or any combination thereof. Training must include for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, full flight simulator, flight training device, or an advanced aviation training device that meets the requirements of § 141.41 of this part.;

- (ii) One 2-hour cross country flight in daytime conditions in a helicopter that consists of a total straight-line distance of more than 50 nautical miles from the original point of departure; and
 - (iii) One 2-hour cross country flight in nighttime conditions in a helicopter that consists of a total straight-line distance of more than 50 nautical miles from the original point of departure; ~~and~~
 - ~~(iv) 3 hours in a helicopter in preparation for the practical test within 60 days preceding the date of the test.~~
- (4) ***For a rotorcraft gyroplane course:*** 30 hours of flight training from a certificated flight instructor on the approved areas of operation listed in paragraph (d) (4) of this section that includes at least—
- (i) 2.5 hours on the control and maneuvering of a gyroplane solely by reference to instruments in instrument meteorological conditions or, including using a view-limiting device, or any combination thereof. Training must include for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, full flight simulator, flight training device, or an advanced aviation training device that meets the requirements of § 141.41 of this part.;
 - (ii) One 2-hour cross country flight in daytime conditions in a gyroplane that consists of a total straight-line distance of more than 50 nautical miles from the original point of departure; and
 - (iii) Two hours of flight training in nighttime conditions in a gyroplane at an airport, that includes 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern); ~~and~~
 - ~~(iv) 3 hours in a gyroplane in preparation for the practical test within 60 days preceding the date of the test.~~
- (5) ***For a powered-lift course:*** 55 hours of flight training from a certificated flight instructor on the approved areas of operation listed in paragraph (d) (5) of this section that includes at least—
- (i) Ten hours of instrument training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must include ~~including~~ attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. A portion of this training may be completed in an Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part. Five hours of the 10 hours required on instrument training must be in a powered-lift; and
 - (ii) One 2-hour cross country flight in daytime conditions in a powered-lift that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure;

- (iii) One 2-hour cross country flight in nighttime conditions in a powered-lift that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; ~~and~~
- ~~(iv) 3 hours in a powered-lift in preparation for the practical test within 60 days preceding the date of the test.~~
- (6) ***For a glider course:*** 4 hours of flight training from a certificated flight instructor on the approved areas of operation in paragraph (d) ~~(6)~~ of this section, that includes at least—
 - (i) Five training flights in a glider with a certificated flight instructor on the launch/tow procedures approved for the course and on the appropriate approved areas of operation listed in paragraph (d) ~~(6)~~ of this section; and
 - (ii) Three training flights in a glider with a certificated flight instructor in preparation for the practical test within 60 days preceding the date of the test.
- (7) ***For a lighter-than-air airship course:*** 55 hours of flight training in airships from a commercial pilot with an airship rating on the approved areas of operation in paragraph (d) ~~(7)~~ of this section that includes at least—
 - (i) Three hours of instrument training in an airship, in instrument meteorological conditions or including using a view-limiting device, or any combination thereof. Training must include ~~for~~ attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
 - (ii) One hour cross country flight in daytime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure; and
 - (iii) One hour cross country flight in nighttime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure; ~~and~~
 - ~~(iv) 3 hours in an airship, in preparation for the practical test within 60 days preceding the date of the test.~~
- (8) ***For a lighter-than-air balloon course:*** Flight training from a commercial pilot with a balloon rating on the approved areas of operation in paragraph (d) ~~(8)~~ of this section that includes at least—
 - (i) If the course involves training in a gas balloon:
 - (A) Two flights of 1 hour each;
 - (B) One flight involving a controlled ascent to at least 5,000 feet above the launch site; and
 - (C) Two flights in preparation for the practical test within 60 days preceding the date of the test.
 - (ii) If the course involves training in a balloon with an airborne heater:
 - (A) Two flights of 30 minutes each;

(B) One flight involving a controlled ascent to at least 3,000 feet above the launch site; and

(C) Two flights in preparation for the practical test within 60 days preceding the date of the test.

(c) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, ~~For~~ for the use of Flight Simulation Training Devices (FSTDs) ~~full-flight simulators or flight training devices~~:

(1) The course may include training in a full flight simulator or flight training device, aviation training device, Enhanced Advanced Aviation Training Device (EAATD) or extended reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and is given by an authorized instructor.

(2) Training in a full flight simulator that meets the requirements of § 141.41(a) may be credited for a maximum of ~~30-50~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(3) Training in a flight training device Level 6 or Level 7 that meets the requirements of § 141.41(a) may be credited for a maximum of ~~20-45~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 40 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 30 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(48) Training in the flight training devices described in paragraphs (c)(2) and (37) of this section, if used in combination, may be credited for a maximum of ~~30-50~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. ~~However, credit for training in a flight training device that meets the requirements of § 141.41(a) cannot exceed the limitation provided for in paragraph (c)(3) of this section.~~

(d) Each approved course must include the flight training on the approved areas of operation ~~listed in this paragraph that are appropriate to the aircraft category and class rating—~~

(1) ~~Specified in the Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or~~
 (2) ~~Specified in a consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.~~ ***For an airplane single-engine course:***

- (i) Preflight preparation;
- (ii) Preflight procedures;
- (iii) ~~Airport and seaplane base operations;~~
- (iv) ~~Takeoffs, landings, and go-arounds;~~
- (v) ~~Performance maneuvers;~~
- (vi) ~~Navigation;~~
- (vii) ~~Slow flight and stalls;~~
- (viii) ~~Emergency operations;~~
- (ix) ~~High-altitude operations; and~~
- (x) ~~Postflight procedures.~~

(2) For an airplane multiengine course:

- (i) Preflight preparation;
- (ii) Preflight procedures;
- (iii) ~~Airport and seaplane base operations;~~
- (iv) ~~Takeoffs, landings, and go-arounds;~~
- (v) ~~Performance maneuvers;~~
- (vi) ~~Navigation;~~
- (vii) ~~Slow flight and stalls;~~
- (viii) ~~Emergency operations;~~
- (ix) ~~Multiengine operations;~~
- (x) ~~High-altitude operations; and~~
- (xi) ~~Postflight procedures.~~

(3) For a rotorcraft helicopter course:

- (i) Preflight preparation;
- (ii) Preflight procedures;
- (iii) ~~Airport and heliport operations;~~

- ~~(iv) Hovering maneuvers;~~
- ~~(v) Takeoffs, landings, and go-arounds;~~
- ~~(vi) Performance maneuvers;~~
- ~~(vii) Navigation;~~
- ~~(viii) Emergency operations;~~
- ~~(ix) Special operations; and~~
- ~~(x) Postflight procedures.~~
- ~~(4) *For a rotorcraft gyroplane course:*~~
 - ~~(i) Preflight preparation;~~
 - ~~(ii) Preflight procedures;~~
 - ~~(iii) Airport operations;~~
 - ~~(iv) Takeoffs, landings, and go-arounds;~~
 - ~~(v) Performance maneuvers;~~
 - ~~(vi) Ground reference maneuvers;~~
 - ~~(vii) Navigation;~~
 - ~~(viii) Flight at slow airspeeds;~~
 - ~~(ix) Emergency operations; and~~
 - ~~(x) Postflight procedures.~~
- ~~(5) *For a powered-lift course:*~~
 - ~~(i) Preflight preparation;~~
 - ~~(ii) Preflight procedures;~~
 - ~~(iii) Airport and heliport operations;~~
 - ~~(iv) Hovering maneuvers;~~
 - ~~(v) Takeoffs, landings, and go-arounds;~~
 - ~~(vi) Performance maneuvers;~~
 - ~~(vii) Navigation;~~
 - ~~(viii) Slow flight and stalls;~~
 - ~~(ix) Emergency operations;~~
 - ~~(x) High altitude operations;~~
 - ~~(xi) Special operations; and~~
 - ~~(xii) Postflight procedures.~~
- ~~(6) *For a glider course:*~~
 - ~~(i) Preflight preparation;~~
 - ~~(ii) Preflight procedures;~~
 - ~~(iii) Airport and gliderport operations;~~
 - ~~(iv) Launches/tows, as appropriate, and landings;~~
 - ~~(v) Performance speeds;~~
 - ~~(vi) Soaring techniques;~~
 - ~~(vii) Performance maneuvers;~~
 - ~~(viii) Navigation;~~

- ~~(ix) Slow flight and stalls;~~
- ~~(x) Emergency operations; and~~
- ~~(xi) Postflight procedures.~~
- ~~(7) ***For a lighter-than-air airship course:***~~
 - ~~(i) Fundamentals of instructing;~~
 - ~~(ii) Technical subjects;~~
 - ~~(iii) Preflight preparation;~~
 - ~~(iv) Preflight lessons on a maneuver to be performed in flight;~~
 - ~~(v) Preflight procedures;~~
 - ~~(vi) Airport operations;~~
 - ~~(vii) Takeoffs, landings, and go-arounds;~~
 - ~~(viii) Performance maneuvers;~~
 - ~~(ix) Navigation;~~
 - ~~(x) Emergency operations; and~~
 - ~~(xi) Postflight procedures.~~
- ~~(8) ***For a lighter-than-air balloon course:***~~
 - ~~(i) Fundamentals of instructing;~~
 - ~~(ii) Technical subjects;~~
 - ~~(iii) Preflight preparation;~~
 - ~~(iv) Preflight lesson on a maneuver to be performed in flight;~~
 - ~~(v) Preflight procedures;~~
 - ~~(vi) Airport operations;~~
 - ~~(vii) Launches and landings;~~
 - ~~(viii) Performance maneuvers;~~
 - ~~(ix) Navigation;~~
 - ~~(x) Emergency operations; and~~
 - ~~(xi) Postflight procedures.~~

5. ***Solo training.*** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each approved course must include at least the following solo flight training:

- (a) ***For an airplane single-engine course.*** Ten hours of solo flight time in a single-engine airplane, or 10 hours of flight time while performing the duties of pilot-in-command in a single-engine airplane with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under paragraph (d)(~~1~~) of section 4 of this appendix, and include—

- (1) One cross-country flight of not less than 300 nautical miles total distance, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii, the longest segment need only have a straight-line distance of at least 150 nautical milesOne cross-country flight, if the

training is being performed in the State of Hawaii, with landings at a minimum of three points, and one of the segments consisting of a straight-line distance of at least 150 nautical miles;

~~(1) One cross-country flight, if the training is being performed in a State other than Hawaii, with landings at a minimum of three points, and one of the segments consisting of a straight-line distance of at least 150 nautical miles;~~

~~(2) One cross-country flight, if the training is being performed in a State other than Hawaii, with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 250 nautical miles; and~~

(2) 5 hours in night VFR conditions with 10-2 takeoffs and 10-2 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower; and:-

(3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.

(b) ***For an airplane multiengine course.*** Ten hours of solo flight time in a multiengine airplane, or 10 hours of flight time while performing the duties of pilot-in-command in a multiengine airplane with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under paragraph (d)(2) of section 4 of this appendix, and include—

(1) One cross-country flight of not less than 300 nautical miles total distance, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii, the longest segment need only have a straight-line distance of at least 150 nautical miles; and

~~(1) One cross-country flight, if the training is being performed in the State of Hawaii, with landings at a minimum of three points, and one of the segments consisting of a straight-line distance of at least 150 nautical miles;~~

~~(2) One cross-country flight, if the training is being performed in a State other than Hawaii, with landings at a minimum of three points and one segment of the flight consisting of straight-line distance of at least 250 nautical miles;~~

(2) 5 hours in night VFR conditions with 10-2 takeoffs and 10-2 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower; and

(3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.

(c) ***For a rotorcraft helicopter course.*** Ten hours of solo flight time in a helicopter, or 10 hours of flight time while performing the duties of pilot-in-command in a helicopter with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under paragraph (d)(3) of section 4 of this appendix, and include—

(1) One cross-country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles from the original point of departure; ~~and~~

(2) 5 hours in night VFR conditions with ~~10-2~~ takeoffs and ~~10-2~~ landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower; ~~and~~

(3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.

(d) ***For a rotorcraft-gyroplane course.*** Ten hours of solo flight time in a gyroplane, or 10 hours of flight time while performing the duties of pilot-in-command in a gyroplane with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under paragraph (d)(~~4~~) of section 4 of this appendix, and include—

(1) One cross-country flight with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles from the original point of departure; ~~and~~

(2) 5 hours in night VFR conditions with ~~10-2~~ takeoffs and ~~10-2~~ landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower; ~~and~~

(3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.

(e) ***For a powered-lift course.*** Ten hours of solo flight time in a powered-lift, or 10 hours of flight time while performing the duties of pilot-in-command in a powered-lift with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under paragraph (d)(~~5~~) of section No. 4 of this appendix, and include—

(1) One cross-country flight, if the training is being performed in the State of Hawaii, with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 150 nautical miles;

(2) One cross-country flight, if the training is being performed in a State other than Hawaii, with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 250 nautical miles; ~~and~~

(3) 5 hours in night VFR conditions with ~~10-2~~ takeoffs and ~~10-2~~ landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower; ~~and~~

(4) 10 total takeoffs and 10 total landings at an airport with an operating control tower.

(f) ***For a glider course:*** 5 solo flights in a glider on the approved areas of operation in paragraph (d)(~~6~~) of section No. 4 of this appendix.

(g) ***For a lighter-than-air airship course:*** 10 hours of flight training in an airship performing the duties of pilot-in-command while under the supervision of a commercial pilot with an airship rating, or any combination thereof. The training must consist of the approved areas of operation in paragraph (d)(7) of section No. 4 of this appendix and include at least—

- (1) One cross-country flight with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 25 nautical miles from the original point of departure; and
- (2) 5 hours in night VFR conditions with 10-2 takeoffs and 10-2 landings (with each landing involving a flight with a traffic pattern); and

(h) ***For a lighter-than-air balloon course:*** Two solo flights if the course is for a hot air balloon rating, or, if the course is for a gas balloon rating, at least two flights in a gas balloon, while performing the duties of pilot-in-command under the supervision of a commercial pilot with a balloon rating, or any combination thereof. The training shall consist of the approved areas of operation in paragraph (d)(8) of section No. 4 of this appendix, in the kind of balloon for which the course applies.

6. *Stage checks and end-of-course tests.*

(a) Each student enrolled in a commercial pilot course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (d) of section No. 4 of this appendix that are appropriate to aircraft category and class rating for which the course applies.

(b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

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Appendix E to Part 141—Airline Transport Pilot Certification Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for an airline transport pilot certification course under this part, for the following ratings:

- (a) Airplane single-engine.
- (b) Airplane multiengine.
- (c) Rotorcraft helicopter.
- (d) Powered-lift.

2. ***Eligibility for enrollment.*** Before completing the flight portion of the airline transport pilot certification course, a person must meet the aeronautical experience

requirements for an airline transport pilot certificate under part 61, subpart G of this chapter that is appropriate to the aircraft category and class rating for which the course applies, and:

- (a) Hold a commercial pilot certificate and an instrument rating, or an airline transport pilot certificate with instrument privileges;
- (b) Meet the military experience requirements under § 61.73 of this chapter to qualify for a commercial pilot certificate and an instrument rating, if the person is a rated military pilot or former rated military pilot of an Armed Force of the United States; or
- (c) Hold either a foreign airline transport pilot license or foreign commercial pilot license and an instrument rating, if the person holds a pilot license issued by a contracting State to the Convention on International Civil Aviation.

3. *Aeronautical knowledge areas.*

(a) ~~Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each~~ approved course must include at least 40 hours of ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the aircraft category and class rating for which the course applies.

(b) Ground training must include the ~~following~~ aeronautical knowledge areas ~~specified in:~~

- (1) ~~) the Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or Applicable Federal Aviation Regulations of this chapter that relate to airline transport pilot privileges, limitations, and flight operations;~~
- (2) ~~A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies. Meteorology, including knowledge of and effects of fronts, frontal characteristics, cloud formations, icing, and upper-air data;~~
- (3) ~~General system of weather and NOTAM collection, dissemination, interpretation, and use;~~
- (4) ~~Interpretation and use of weather charts, maps, forecasts, sequence reports, abbreviations, and symbols;~~
- (5) ~~National Weather Service functions as they pertain to operations in the National Airspace System;~~
- (6) ~~Windshear and microburst awareness, identification, and avoidance;~~
- (7) ~~Principles of air navigation under instrument meteorological conditions in the National Airspace System;~~
- (8) ~~Air traffic control procedures and pilot responsibilities as they relate to en route operations, terminal area and radar operations, and instrument departure and approach procedures;~~

- ~~(9) Aircraft loading, weight and balance; use of charts, graphs, tables, formulas, and computations; and the effects on aircraft performance;~~
- ~~(10) Aerodynamics relating to an aircraft's flight characteristics and performance in normal and abnormal flight regimes;~~
- ~~(11) Human factors;~~
- ~~(12) Aeronautical decision making and judgment; and~~
- ~~(13) Crew resource management to include crew communication and coordination.~~

4. ***Flight training.***

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each approved course must include at least 25 hours of flight training on the approved areas of operation listed in paragraph (c) of this section appropriate to the aircraft category and class rating for which the course applies. At least 15 hours of this flight training must be instrument flight training.

(b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, For the use of ~~full~~ flight simulators ~~or flight~~ training devices—

(1) The course may include training in a full flight simulator ~~or~~, flight training device, aviation training device, Enhanced Advanced Aviation Training Device (EAATD), or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.

(2) Training in a full flight simulator that meets the requirements of § 141.41(a) may be credited for a maximum of ~~50-100~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(3) Training in a flight training device level 6 or level 7 that meets the requirements of § 141.41(a) may be credited for a maximum of ~~25-80~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 45 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

~~(48) Training in full-flight simulators or flight training devices described in paragraphs (b)(2) and (37) of this section, if used in combination, may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. However, credit for training in a flight training device that meets the requirements of § 141.41(a) cannot exceed the limitation provided for in paragraph (b)(3) of this section.~~

(c) Each approved course must include flight training on the approved areas of operation ~~listed specified in this paragraph appropriate to the aircraft category and class rating for which the course applies:~~

~~(1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or Preflight preparation;~~

~~(2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies. Preflight procedures;~~

~~(3) Takeoff and departure phase;~~

~~(4) In-flight maneuvers;~~

~~(5) Instrument procedures;~~

~~(6) Landings and approaches to landings;~~

~~(7) Normal and abnormal procedures;~~

~~(8) Emergency procedures; and~~

~~(9) Postflight procedures.~~

5. Stage checks and end-of-course tests.

(a) Each student enrolled in an airline transport pilot course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (c) of section No. 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies.

~~(b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.~~

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40909, July 30, 1997; Amdt. 141-12, 74 FR 42565, Aug. 21, 2009; Docket FAA-2015-1846, Amdt. 141-18, 81 FR 21461, Apr. 12, 2016]

Appendix F to Part 141—Flight Instructor Certification Course

1. **Applicability.** This appendix prescribes the minimum curriculum for a flight instructor certification course ~~and an additional flight instructor rating course~~ required under this part, for the following ratings:

- (a) Airplane single-engine.
- (b) Airplane multiengine.
- (c) Rotorcraft helicopter.
- (d) Rotorcraft gyroplane.
- (e) Powered-lift.
- (f) Glider category.

2. **Eligibility for enrollment.** A person must hold the following prior to enrolling in the flight portion of the flight instructor ~~or additional flight instructor rating~~ course:

- (a) A commercial pilot certificate or an airline transport pilot certificate, with an aircraft category and class rating appropriate to the flight instructor rating for which the course applies; and
- (b) An instrument rating or privilege in an aircraft that is appropriate to the aircraft category and class rating for which the course applies, if the course is for a flight instructor airplane or powered-lift instrument rating.

3. **Aeronautical knowledge training.**

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each approved course must include at least the ~~following 40 hours of~~ ground training in the aeronautical knowledge areas listed in paragraph (b) of this section~~.~~

~~(1) 40 hours of training if the course is for an initial issuance of a flight instructor certificate; or~~

~~(2) 20 hours of training if the course is for an additional flight instructor rating.~~

(b) Ground training must include the ~~following~~ aeronautical knowledge areas specified in:

(1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or~~The fundamentals of instructing including—~~

- ~~(i) The learning process;~~
- ~~(ii) Elements of effective teaching;~~
- ~~(iii) Student evaluation and testing;~~
- ~~(iv) Course development;~~

- ~~(v) Lesson planning; and~~
- ~~(vi) Classroom training techniques.~~

(2) ~~A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies. The aeronautical knowledge areas in which training is required for—~~

- ~~(i) A recreational, private, and commercial pilot certificate that is appropriate to the aircraft category and class rating for which the course applies; and~~
- ~~(ii) An instrument rating that is appropriate to the aircraft category and class rating for which the course applies, if the course is for an airplane or powered-lift aircraft rating.~~

(c) A student who satisfactorily completes 2 years of study on the principles of education at a college or university may be credited with no more than 20 hours of the training required in paragraph (a)(1) of this section.

4. *Flight training.*

(a) ~~Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each~~ approved course must include at least the following flight training on the approved areas of operation of paragraph (c) of this section appropriate to the flight instructor rating for which the course applies:

- (1) 25 hours, if the course is for an airplane, rotorcraft, or powered-lift rating; and
- (2) 10 hours, which must include 10 flights, if the course is for a glider category rating.

(b) ~~Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, For for~~ the use of flight simulators ~~or flight~~ training devices:

- (1) The course may include training in a full flight simulator ~~or, flight training device, Enhanced Advanced Aviation Training Device (EAATD), aviation training device, or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, and~~ provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.
- (2) Training in a full flight simulator that meets the requirements of § 141.41(a), may be credited for a maximum of ~~10-80~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (3) Training in a flight training device ~~level 6 or level 7~~ that meets the requirements of § 141.41(a), may be credited for a maximum of ~~5-60~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 35 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(48) Training in full flight simulators or flight training devices described in paragraphs (b)(2) and (37) of this section, if used in combination, may be credited for a maximum of ~~10-80~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. ~~However, credit for training in a flight training device that meets the requirements of § 141.41(a) cannot exceed the limitation provided for in paragraph (b)(3) of this section.~~

(c) Each approved course must include flight training on the approved areas of operation ~~listed in this paragraph that are appropriate to the aircraft category and class rating for which the course applies—specified in -~~

(1) ~~The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or~~

(2) ~~A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.~~*For an airplane—single-engine course:*

- ~~(i) Fundamentals of instructing;~~
- ~~(ii) Technical subject areas;~~
- ~~(iii) Preflight preparation;~~
- ~~(iv) Preflight lesson on a maneuver to be performed in flight;~~
- ~~(v) Preflight procedures;~~
- ~~(vi) Airport and seaplane base operations;~~

- ~~(vii) Takeoffs, landings, and go-arounds;~~
- ~~(viii) Fundamentals of flight;~~
- ~~(ix) Performance maneuvers;~~
- ~~(x) Ground reference maneuvers;~~
- ~~(xi) Slow flight, stalls, and spins;~~
- ~~(xii) Basic instrument maneuvers;~~
- ~~(xiii) Emergency operations; and~~
- ~~(xiv) Postflight procedures.~~

~~(2) For an airplane—multiengine course:~~

- ~~(i) Fundamentals of instructing;~~
- ~~(ii) Technical subject areas;~~
- ~~(iii) Preflight preparation;~~
- ~~(iv) Preflight lesson on a maneuver to be performed in flight;~~
- ~~(v) Preflight procedures;~~
- ~~(vi) Airport and seaplane base operations;~~
- ~~(vii) Takeoffs, landings, and go-arounds;~~
- ~~(viii) Fundamentals of flight;~~
- ~~(ix) Performance maneuvers;~~
- ~~(x) Ground reference maneuvers;~~
- ~~(xi) Slow flight and stalls;~~
- ~~(xii) Basic instrument maneuvers;~~
- ~~(xiii) Emergency operations;~~
- ~~(xiv) Multiengine operations; and~~
- ~~(xv) Postflight procedures.~~

~~(3) For a rotorcraft—helicopter course:~~

- ~~(i) Fundamentals of instructing;~~
- ~~(ii) Technical subject areas;~~
- ~~(iii) Preflight preparation;~~
- ~~(iv) Preflight lesson on a maneuver to be performed in flight;~~
- ~~(v) Preflight procedures;~~
- ~~(vi) Airport and heliport operations;~~
- ~~(vii) Hovering maneuvers;~~
- ~~(viii) Takeoffs, landings, and go-arounds;~~
- ~~(ix) Fundamentals of flight;~~
- ~~(x) Performance maneuvers;~~
- ~~(xi) Emergency operations;~~
- ~~(xii) Special operations; and~~
- ~~(xiii) Postflight procedures.~~

~~(4) For a rotorcraft—gyroplane course:~~

- ~~(i) Fundamentals of instructing;~~

- ~~(ii) Technical subject areas;~~
- ~~(iii) Preflight preparation;~~
- ~~(iv) Preflight lesson on a maneuver to be performed in flight;~~
- ~~(v) Preflight procedures;~~
- ~~(vi) Airport operations;~~
- ~~(vii) Takeoffs, landings, and go-arounds;~~
- ~~(viii) Fundamentals of flight;~~
- ~~(ix) Performance maneuvers;~~
- ~~(x) Flight at slow airspeeds;~~
- ~~(xi) Ground reference maneuvers;~~
- ~~(xii) Emergency operations; and~~
- ~~(xiii) Postflight procedures.~~
- (5) For a powered-lift course:***
 - ~~(i) Fundamentals of instructing;~~
 - ~~(ii) Technical subject areas;~~
 - ~~(iii) Preflight preparation;~~
 - ~~(iv) Preflight lesson on a maneuver to be performed in flight;~~
 - ~~(v) Preflight procedures;~~
 - ~~(vi) Airport and heliport operations;~~
 - ~~(vii) Hovering maneuvers;~~
 - ~~(viii) Takeoffs, landings, and go-arounds;~~
 - ~~(ix) Fundamentals of flight;~~
 - ~~(x) Performance maneuvers;~~
 - ~~(xi) Ground reference maneuvers;~~
 - ~~(xii) Slow flight and stalls;~~
 - ~~(xiii) Basic instrument maneuvers;~~
 - ~~(xiv) Emergency operations;~~
 - ~~(xv) Special operations; and~~
 - ~~(xvi) Postflight procedures.~~
- (6) For a glider course:***
 - ~~(i) Fundamentals of instructing;~~
 - ~~(ii) Technical subject areas;~~
 - ~~(iii) Preflight preparation;~~
 - ~~(iv) Preflight lesson on a maneuver to be performed in flight;~~
 - ~~(v) Preflight procedures;~~
 - ~~(vi) Airport and gliderport operations;~~
 - ~~(vii) Tows or launches, landings, and go-arounds, if applicable;~~
 - ~~(viii) Fundamentals of flight;~~
 - ~~(ix) Performance speeds;~~
 - ~~(x) Soaring techniques;~~

- ~~(xi) Performance maneuvers;~~
- ~~(xii) Slow flight, stalls, and spins;~~
- ~~(xiii) Emergency operations; and~~
- ~~(xiv) Postflight procedures.~~

5. *Stage checks and end-of-course tests.*

(a) Each student enrolled in a flight instructor course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the appropriate approved areas of operation listed in paragraph (c) of section No. 4 of this appendix appropriate to the flight instructor rating for which the course applies.

(b) In the case of a student who is enrolled in a flight instructor-airplane rating or flight instructor-glider rating course, that student must have:

- (1) Received a logbook endorsement from a certificated flight instructor certifying the student received ground and flight training on stall awareness, spin entry, spins, and spin recovery procedures in an aircraft that is certificated for spins and is appropriate to the rating sought; and
- (2) Demonstrated instructional proficiency in stall awareness, spin entry, spins, and spin recovery procedures.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40909, July 30, 1997, as amended by Docket FAA-2015-1846, Amdt. 141-18, 81 FR 21461, Apr. 12, 2016]

Appendix G to Part 141—Flight Instructor Additional Class Rating Course

1. **Applicability.** This appendix prescribes the minimum curriculum for a flight instructor additional class rating course required under this part, for the following ratings:

- (a) Airplane single-engine.
- (b) Airplane multiengine.
- (c) Rotorcraft helicopter.
- (d) Rotorcraft gyroplane.

2. **Eligibility for enrollment.** A person must hold a flight instructor certificate, with an aircraft category appropriate to the flight instructor rating for which the course applies.

3. **Aeronautical knowledge training.**

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the 20 hours of ground training in the aeronautical knowledge areas listed in paragraph (b) of this section.

(b) Ground training must include the aeronautical knowledge areas specified in:

- (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or

(2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

4. Flight training.

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least the 15 hours of flight training on the approved areas of operation of paragraph (c) of this section appropriate to the flight instructor rating for which the course applies.

(b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, for the use of flight simulator training devices:

(1) The course may include training in a full flight simulator, flight training device, Enhanced Advanced Aviation Training Device (EAATD), aviation training device, or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, and provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.

(2) Training in a full flight simulator that meets the requirements of § 141.41(a), may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(3) Training in a flight training device level 6 or level 7 that meets the requirements of § 141.41(a), may be credited for a maximum of 60 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 35 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(8) Training in full flight simulators or flight training devices described in paragraphs (b)(2) and (7) of this section, if used in combination, may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(c) Each approved course must include flight training on the approved areas of operation specified in -

(1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or

(2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

5. Stage checks and end-of-course tests.

(a) Each student enrolled in a flight instructor course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the appropriate approved areas of operation listed in paragraph (c) of section No. 4 of this appendix appropriate to the flight instructor rating for which the course applies.

Appendix ~~G~~H to Part 141—Flight Instructor Instrument- Initial Certification (For an Airplane, Helicopter, or Powered-Lift Instrument Instructor Rating, as Appropriate) Certification Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for an initial flight instructor instrument certification course required under this part, for the following ratings:

- (a) Flight Instructor Instrument—Airplane.
- (b) Flight Instructor Instrument—Helicopter.
- (c) Flight Instructor Instrument—Powered-lift aircraft.

2. ***Eligibility for enrollment.*** A person must hold the following prior to enrolling in the flight portion of the flight instructor instrument course:

- (a) A commercial pilot certificate or airline transport pilot certificate with an aircraft category and class rating appropriate to the flight instructor category and class rating for which the course applies; and

(b) An instrument rating or privilege on that flight instructor applicant's pilot certificate that is appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies.

3. *Aeronautical knowledge training.*

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety. Each approved course must include at least 40 hours of ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies:

(b) Ground training must include the ~~following~~ aeronautical knowledge areas specified in:

- (1) The Practical Test Standards for Airplane Rating and Helicopter Rating; or
- (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies. The fundamentals of instructing including:
 - (i) ~~The learning process;~~
 - (ii) ~~Elements of effective teaching;~~
 - (iii) ~~Student evaluation and testing;~~
 - (iv) ~~Course development;~~
 - (v) ~~Lesson planning; and~~
 - (vi) ~~Classroom training techniques.~~
- (2) ~~The aeronautical knowledge areas in which training is required for an instrument rating that is appropriate to the aircraft category and class rating for the course which applies.~~

4. *Flight training.*

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety. Each approved course must include at least ~~15~~ 25 hours of flight training in the approved areas of operation of paragraph (c) of this section appropriate to the flight instructor rating for which the course applies.

(b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety. For the use of ~~full-flight simulators or~~ flight simulation training devices (FSTD):

- (1) The course may include training in a full flight simulator ~~or~~, flight training device, Enhanced Advanced Aviation Training Device (EAATD), aviation training device, or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided

it is representative of the aircraft for which the course is approved for, meets requirements of this paragraph, and the training is given by an instructor.

(2) Training in a full flight simulator that meets the requirements of § 141.41(a), may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(3) Training in a flight training device level 6 or level 7 that meets the requirements of § 141.41(a), may be credited for a maximum of ~~5-100~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(48) Training in ~~full-flight~~ simulators ~~or~~ flight training devices described in paragraphs (b)(2) and (37) of this section, if used in combination, may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. ~~However, credit for training in a flight training device that meets the requirements of § 141.41(b) cannot exceed the limitation provided for in paragraph (b)(3) of this section.~~

(c) An approved course for the flight instructor-instrument rating must include flight training on the ~~following~~ approved areas of operation that are ~~appropriate to the instrument-aircraft category and class rating for which the course applies~~ specified in:

(1) The Practical Test Standards for Airplane Rating and Helicopter Rating; or

- ~~(2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies. Fundamentals of instructing;~~
- ~~(2) Technical subject areas;~~
- ~~(3) Preflight preparation;~~
- ~~(4) Preflight lesson on a maneuver to be performed in flight;~~
- ~~(5) Air traffic control clearances and procedures;~~
- ~~(6) Flight by reference to instruments;~~
- ~~(7) Navigation systems;~~
- ~~(8) Instrument approach procedures;~~
- ~~(9) Emergency operations; and~~
- ~~(10) Postflight procedures.~~

5. ***Stage checks and end-of-course tests.*** Each student enrolled in a flight instructor instrument course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (c) of section No. 4 of this appendix that are appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies.

Appendix G I to Part 141—Flight Instructor Instrument-Add On- (For an Airplane, Helicopter, or Powered-Lift Instrument Instructor Rating, as Appropriate) Certification Course

- 1. Applicability. This appendix prescribes the minimum curriculum for a flight instructor instrument certification course being added to an existing flight instructor certificate required under this part, for the following ratings:
 - (a) Flight Instructor Instrument—Airplane.
 - (b) Flight Instructor Instrument—Helicopter.
 - (c) Flight Instructor Instrument—Powered-lift aircraft.
- 2. Eligibility for enrollment. A person must hold the following prior to enrolling in the flight portion of the flight instructor instrument course:
 - (a) A commercial pilot certificate or airline transport pilot certificate with an aircraft category and class rating appropriate to the flight instructor category and class rating for which the course applies;
 - (b) An instrument rating or privilege on that flight instructor applicant's pilot certificate that is appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies; and

(c) A flight instructor certificate with an aircraft category and class rating appropriate to the category and class being used for certification.

3. Aeronautical knowledge training.

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each approved course must include at least 20 hours of ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies:

(b) Ground training must include the following aeronautical knowledge areas specified in:

(1) The Practical Test Standards appropriate to the aircraft category and class rating for which the course applies; or

(2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

(3) The aeronautical knowledge areas in which training is required for an instrument rating that is appropriate to the aircraft category and class rating for the course which applies.

4. Flight training.

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, Each each approved course must include at least 15 hours of flight training in the approved areas of operation of paragraph (c) of this section appropriate to the flight instructor rating for which the course applies.

(b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, For the use of full flight simulators or flight training devices:

(1) The course may include training in a full flight simulator or, flight training device, Enhanced Advanced Aviation Training Device (EAATD), aviation training device, or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided it is representative of the aircraft for which the course is approved for, meets requirements of this paragraph, and the training is given by an instructor.

(2) Training in a full flight simulator that meets the requirements of § 141.41(a), may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(3) Training in a flight training device level 6 or level 7 that meets the requirements of § 141.41(a), may be credited for a maximum of 5 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 80 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(48) Training in full flight simulators or flight training devices described in paragraphs (b)(2) and (7) of this section, if used in combination, may be credited for a maximum of 100 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. However, credit for training in a flight training device that meets the requirements of § 141.41(b) cannot exceed the limitation provided for in paragraph (b)(3) of this section.

(c) An approved course for the flight instructor-instrument rating must include flight training on the following approved areas of operation that are appropriate to the instrument-aircraft category and class rating for which the course applies specified in:

(1) The Practical Test Standards (PTS) appropriate to the aircraft category and class rating for which the course applies; or

(2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

5. Stage checks and end-of-course tests. Each student enrolled in a flight instructor instrument course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (c) of section No. 4 of this appendix that are appropriate to the flight instructor instrument rating (for an

airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40909, July 30, 1997, as amended by Docket FAA-2015-1846, Amdt. 141-18, 81 FR 21461, Apr. 12, 2016]

Appendix ~~H~~J to Part 141—Ground Instructor Certification Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for a ground instructor certification course and an additional ground instructor rating course, required under this part, for the following ratings:

- (a) Ground Instructor—Basic.
- (b) Ground Instructor—Advanced.
- (c) Ground Instructor—Instrument.

2. ***Aeronautical knowledge training.***

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of quality. ~~Each~~ ~~each~~ approved course must include at least the following ground training on the knowledge areas listed in paragraphs (b), (c), (d), and (e) of this section, appropriate to the ground instructor rating for which the course applies:

- (1) 20 hours of training if the course is for an initial issuance of a ground instructor certificate; or
- (2) 10 hours of training if the course is for an additional ground instructor rating.

(b) Ground training must include knowledge areas specified by a consensus standard that has been accepted by the Administrator, or, in the absence of such a standard, the following aeronautical knowledge areas:

- (1) Learning process;
- (2) Elements of effective teaching;
- (3) Student evaluation and testing;
- (4) Course development;
- (5) Lesson planning; and
- (6) Classroom training techniques.

(c) Ground training for a basic ground instructor certificate must include the aeronautical knowledge areas applicable to a sport and private pilot.

(d) Ground training for an advanced ground instructor rating must include the aeronautical knowledge areas applicable to a sport, private, commercial, and airline transport pilot.

(e) Ground training for an instrument ground instructor rating must include the aeronautical knowledge areas applicable to an instrument rating.

(f) A student who satisfactorily completed 2 years of study on the principles of education at a college or university may be credited with 10 hours of the training required in paragraph (a)(1) of this section.

3. ***Stage checks and end-of-course tests.*** Each student enrolled in a ground instructor course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved knowledge areas in paragraph (b), (c), (d), and (e) of section No. 2 of this appendix appropriate to the ground instructor rating for which the course applies.

Appendix ~~I~~K to Part 141—Additional Aircraft Category and/or Class Rating Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for an additional aircraft category rating course or an additional aircraft class rating course required under this part, for the following ratings:

- (a) Airplane single-engine.
- (b) Airplane multiengine.
- (c) Rotorcraft helicopter.
- (d) Rotorcraft gyroplane.
- (e) Powered-lift.
- (f) Glider.
- (g) Lighter-than-air airship.
- (h) Lighter-than-air balloon.

2. ***Eligibility for enrollment.*** A person must hold the level of pilot certificate for the additional aircraft category and class rating for which the course applies prior to enrolling in the flight portion of an additional aircraft category or additional aircraft class rating course.

3. ***Aeronautical knowledge training.***

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, For-for a sport pilot certificate, the following aeronautical knowledge areas must be included in a 10-hour ground training course for an additional aircraft category and/or class rating:

- (1) Applicable regulations issued by the Federal Aviation Administration for sport pilot privileges, limitations, and flight operations;
- (2) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence;
- (3) Effects of density altitude on takeoff and climb performance;
- (4) Weight and balance computations;
- (5) Principles of aerodynamics, powerplants, and aircraft systems;
- (6) Stall awareness, spin entry, spins, and spin recovery techniques if applying for an airplane single-engine rating; and

(7) Preflight action that includes how to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements.

(b) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, For for a private pilot certificate, the following aeronautical knowledge areas must be included in a 10-hour ground training course for an additional class rating or a 15-hour ground training course for an additional aircraft category and class rating:

- (1) Applicable regulations issued by the Federal Aviation Administration for private pilot privileges, limitations, and flight operations;
- (2) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence;
- (3) Effects of density altitude on takeoff and climb performance;
- (4) Weight and balance computations;
- (5) Principles of aerodynamics, powerplants, and aircraft systems;
- (6) Stall awareness, spin entry, spins, and spin recovery techniques if applying for an airplane single-engine rating; and
- (7) Preflight action that includes how to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements.

(c) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, For for a commercial pilot certificate, the following aeronautical knowledge areas must be included in a 15-hour ground training course for an additional class rating or a 20-hour ground training course for an additional aircraft category and class rating:

- (1) Applicable regulations issued by the Federal Aviation Administration for commercial pilot privileges, limitations, and flight operations;
- (2) Basic aerodynamics and the principles of flight;
- (3) Safe and efficient operation of aircraft;
- (4) Weight and balance computations;
- (5) Use of performance charts;
- (6) Significance and effects of exceeding aircraft performance limitations;
- (7) Principles and functions of aircraft systems;
- (8) Maneuvers, procedures, and emergency operations appropriate to the aircraft;
- (9) Nighttime and high-altitude operations; and
- (10) Procedures for flight and ground training for lighter-than-air ratings.

(d) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, For for an airline transport pilot certificate, the following aeronautical knowledge areas must be included in a 25-hour ground training course for an additional aircraft category and/or class rating:

- (1) Applicable regulations issued by the Federal Aviation Administration for airline transport pilot privileges, limitations, and flight operations;
- (2) Meteorology, including knowledge and effects of fronts, frontal characteristics, cloud formations, icing, and upper-air data;
- (3) General system of weather and NOTAM collection, dissemination, interpretation, and use;
- (4) Interpretation and use of weather charts, maps, forecasts, sequence reports, abbreviations, and symbols;
- (5) National Weather Service functions as they pertain to operations in the National Airspace System;
- (6) Windshear and microburst awareness, identification, and avoidance;
- (7) Principles of air navigation under instrument meteorological conditions in the National Airspace System;
- (8) Air traffic control procedures and pilot responsibilities as they relate to en route operations, terminal area and radar operations, and instrument departure and approach procedures;
- (9) Aircraft loading; weight and balance; use of charts, graphs, tables, formulas, and computations; and the effects on aircraft performance;
- (10) Aerodynamics relating to an aircraft's flight characteristics and performance in normal and abnormal flight regimes;
- (11) Human factors;
- (12) Aeronautical decision making and judgment; and
- (13) Crew resource management to include crew communication and coordination.

4. Flight training.

- (a) Course for an additional airplane category and single-engine class rating.

(1) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, For for the sport pilot certificate, the course must include 15 hours of flight training on the areas of operations under part 141, appendix A, paragraph 4(ea)(+) that include—

- (i) Two hours of flight training to an airport and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under § 61.100 of this chapter; and

~~(ii) Three hours of flight training in an aircraft with the airplane category and single-engine class within 2 calendar months before the date of the practical test.~~

(2) For the private pilot certificate, the course must include 20 hours of flight training on the areas of operations under part 141, appendix B, paragraph 4(d)(+). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). A flight simulator and flight training device cannot be used to meet

~~more than 4 hours of the training requirements, and the use of the flight training device is limited to 3 hours of the 4 hours permitted.~~ The course must include—

- (i) Three hours of cross country training in a single-engine airplane, except as provided under § 61.111 of this chapter;
- (ii) Three hours of nighttime flight training in a single-engine airplane that includes one cross country flight of more than 100 nautical miles total distance, and 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport;
- (iii) Three hours of flight training in a single-engine airplane on the control and maneuvering of the airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and

~~(iv) Three hours of flight training in a single-engine airplane within 2 calendar months before the date of the practical test.~~

(3) For the commercial pilot certificate, the course must include 55 hours of flight training on the areas of operations under part 141, appendix D, paragraph 4(d)~~(4)~~. A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). ~~A flight simulator and flight training device cannot be used to meet more than 16.5 hours of the training requirements, and the use of the flight training device is limited to 11 hours of the 16.5 hours permitted.~~ The course must include—

- (i) Five hours of instrument training in a single-engine airplane that includes training in instrument meteorological conditions or using a view-limiting device on attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. A portion of this training may be completed in a Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part;
- (ii) Ten hours of training in a complex airplane, a turbine-powered airplane, or a technically advanced airplane that meets the requirements of § 61.129(j), or any combination thereof. The airplane must be appropriate to land or sea for the rating sought;
- (iii) One 2-hour cross country flight during daytime conditions in a single-engine airplane, a total straight-line distance of more than 100 nautical miles from the original point of departure; and
- (iv) One 2-hour cross country flight during nighttime conditions in a single-engine airplane, a total straight-line distance of more than 100 nautical miles from the original point of departure. ~~and~~

~~(v) Three hours in a single-engine airplane within 2 calendar months before the date of the practical test.~~

(4) For the airline transport pilot certificate, the course must include 25 hours flight training, including 15 hours of instrument training, in a single-engine airplane on the areas of operation under part 141, appendix E, paragraph 4.(c). A flight simulation training device may be used in accordance with appendix E, paragraph 4(b). ~~A flight simulator and flight training device cannot be used to meet more than 12.5 hours of the training requirements, and the use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.~~

(b) Course for an additional airplane category and multiengine class rating.

(1) For the private pilot certificate, the course requires 20 hours flight training on the areas of operations under part 141, appendix B, paragraph 4.(d)(2). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted.~~ The course must include—

(i) Three hours of cross country training in a multiengine airplane, except as provided under § 61.111 of this chapter;

(ii) Three hours of nighttime flight training in a multiengine airplane that includes one cross country flight of more than 100 nautical miles total distance, and ~~10-2~~ takeoffs and ~~10-2~~ landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and

(iii) Three hours of flight training in a multiengine airplane on the control and maneuvering of a multiengine airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and

~~(iv) Three hours of flight training in a multiengine airplane in preparation for the practical test within 2 calendar months before the date of the test.~~

(2) For the commercial pilot certificate, the course requires 55 hours flight training on the areas of operations under part 141, appendix D, paragraph 4.(d)(2). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 16.5 hours to meet the training requirements, and use of the flight training device is limited to 11 hours of the 16.5 hours permitted.~~ The course must include—

(i) Five hours of instrument training in a multiengine airplane including training instrument meteorological conditions or using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems, or any combination thereof. A portion of this training may be completed in a Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part;

- (ii) Ten hours of training in a multiengine airplane that has retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered;
 - (iii) One 2-hour cross country flight during daytime conditions in a multiengine airplane, and a total straight-line distance of more than 100 nautical miles from the original point of departure; and
 - (iv) One 2-hour cross country flight during nighttime conditions in a multiengine airplane, and a total straight-line distance of more than 100 nautical miles from the original point of departure; ~~and~~
 - ~~(v) Three hours in a multiengine airplane within 2 calendar months before the date of the practical test.~~
- (3) For the airline transport pilot certificate, the course requires 25 hours of flight training in a multiengine airplane on the areas of operation under part 141, appendix E, paragraph 4.(c). A flight simulation training device may be used in accordance with appendix E, paragraph 4(b). that includes Training must include 15 hours of instrument training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. A portion of this training may be completed in a Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part. A flight simulator and flight training device cannot be used more than 12.5 hours to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.
- (c) Course for an additional rotorcraft category and helicopter class rating.
- (1) For the sport pilot certificate, the course requires 15 hours of flight training on the areas of operations under part 141, appendix A, paragraph 4.~~(e)(2)~~ that includes—
- (i) Two hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under § 61.100 of this chapter; ~~and~~
 - ~~(ii) Three hours of flight training in a rotorcraft category and a helicopter class aircraft within 2 calendar months before the date of the practical test.~~
- (2) For the private pilot certificate, the course requires 20 hours flight training on the areas of operations under part 141, appendix B, paragraph 4.(d)~~(3)~~. A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted. The course must include—
- (i) Except as provided under § 61.111 of this chapter, 3 hours of cross country flight training in a helicopter; and
 - (ii) Three hours of nighttime flight training in a helicopter that includes one cross country flight of more than 50 nautical miles total distance, and ~~10~~ 2 takeoffs and

~~10-2~~ landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; ~~and~~

~~(iii) Three hours of flight training in a helicopter within 2 calendar months before the date of the practical test.~~

(3) The commercial pilot certificate level requires 30 hours flight training on the areas of operations under appendix D of part 141, paragraph 4.(d)~~(3)~~. A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 9 hours to meet the training requirements, and use of the flight training device is limited to 6 hours of the 9 hours permitted.~~ The course must include—

(i) Five hours on the control and maneuvering of a helicopter solely by reference to instruments, and must include training in instrument meteorological conditions or using a view-limiting device for attitude instrument flying (or any combination thereof), on partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft ~~flight simulator, flight training device, or an aviation training device~~ or flight simulation training device;

(ii) One 2-hour cross country flight during daytime conditions in a helicopter, a total straight-line distance of more than 50 nautical miles from the original point of departure;

(iii) One 2-hour cross country flight during nighttime conditions in a helicopter, a total straight-line distance of more than 50 nautical miles from the original point of departure; and

~~(iv) Three hours in a helicopter within 2 calendar months before the date of the practical test.~~

(4) For the airline transport pilot certificate, the course requires 25 hours of flight training, including 15 hours of instrument training, in a helicopter on the areas of operation under part 141, appendix E, paragraph 4.~~(c)~~. A flight simulation training device may be used in accordance with appendix E, paragraph 4(b). ~~A flight simulator and flight training device cannot be used more than 12.5 hours to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.~~

(d) Course for an additional rotorcraft category and a gyroplane class rating.

(1) For the ~~recreational or sport~~ pilot certificate, the course requires 15 hours flight training on the areas of operations under part 141, appendix A, paragraph 4.~~(c)~~~~(3)~~ that includes—

(i) Two hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under § 61.100 of this chapter; ~~and~~

~~(ii) Three hours of flight training in a gyroplane class within 2 calendar months before the date of the practical test.~~

(2) For the private pilot certificate, the course requires 20 hours flight training on the areas of operations under part 141, appendix B, paragraph 4.(d)(4). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted.~~ The course must include—

(i) Three hours of cross country flight training in a gyroplane, except as provided under § 61.111 of this chapter; and

(ii) Three hours of nighttime flight training in a gyroplane that includes one cross country flight of more than 50 nautical miles total distance, and ~~10-2~~ takeoffs and ~~10-2~~ landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and

~~(iii) Three hours of flight training in a gyroplane within 2 calendar months before the date of the practical test.~~

(3) For the commercial pilot certificate, the course requires 30 hours flight training on the areas of operations of appendix D to part 141, paragraph 4.(d)(4). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 6 hours to meet the training requirements, and use of the flight training device is limited to 6 hours of the 9 hours permitted.~~ The course must include—

(i) 2.5 hours on the control and maneuvering of a gyroplane solely by reference to instruments, and must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, flight simulator, flight training device, or an aviation training device.

(ii) One 2-hour cross country flight during daytime conditions in a gyroplane, a total straight-line distance of more than 50 nautical miles from the original point of departure; and

(iii) Two hours of flight training during nighttime conditions in a gyroplane at an airport, that includes ~~10-2~~ takeoffs and ~~10-2~~ landings to a full stop (with each landing involving a flight in the traffic pattern); and

~~(iv) Three hours in a gyroplane within 2 calendar months before the date of the practical test.~~

(e) Course for an additional lighter-than-air category and airship class rating.

(1) For the private pilot certificate, the course requires 20 hours of flight training on the areas of operation under part 141, appendix B, paragraph 4.(d)(7). A flight simulation training device may be used in accordance with appendix B, paragraph

~~4(c). A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted.~~ The course must include—

- (i) Three hours of cross country flight training in an airship, except as provided under § 61.111 of this chapter;
- (ii) Three hours of nighttime flight training in an airship that includes one cross country flight of more than 25 nautical miles total distance and 5 takeoffs and 5 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and
- (iii) Three hours of flight training in an airship on the control and maneuvering of an airship solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; ~~and~~
- ~~(iv) Three hours of flight training in an airship within 2 calendar months before the date of the practical test.~~

(2) For the commercial pilot certificate, the course requires 55 hours of flight training on the areas of operation under part 141, appendix D, paragraph 4.(d)~~(7)~~. A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 16.5 hours to meet the training requirements, and use of the flight training device is limited to 11 hours of the 16.5 hours permitted.~~ The course must include—

- (i) Three hours of instrument training in an airship that must include training in instrument meteorological conditions or using a view-limiting device for attitude instrument flying (or any combination thereof), partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
- (ii) One hour cross country flight during daytime conditions in an airship that consists of, a total straight-line distance of more than 25 nautical miles from the original point of departure; and
- (iii) One hour cross country flight during nighttime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure; ~~and~~
- ~~(iv) Three hours of flight training in an airship within 2 calendar months before the date of the practical test.~~

(f) Course for an additional lighter-than-air category and a gas balloon class rating.

(1) For the private pilot certificate, the course requires eight hours of flight training that includes 5 training flights on the areas of operations under part 141, appendix B, paragraph 4(c)~~(8)~~. A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 1.6 hours to meet the training requirements, and use of~~

~~the flight training device is limited to 1.2 hours of the 1.6 hours permitted.~~ The course must include—

- (i) Two flights of 1 hour each;
- (ii) One flight involving a controlled ascent to 3,000 feet above the launch site; and
- (iii) Two flights within 2 calendar months before the date of the practical test.

(2) For the commercial pilot certificate, the course requires 10 hours of flight training that includes eight training flights on the areas of operations under part 141, appendix D, paragraph 4(c)(8). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 3 hours to meet the training requirements, and use of the flight training device is limited to 2 hours of the 3 hours permitted.~~ The course must include—

- (i) Two flights of 1 hour each; and
- (ii) One flight involving a controlled ascent to 5,000 feet above the launch site; and
- ~~(iii) Two flights within 2 calendar months before the date of the practical test.~~

(g) Course for an additional lighter-than-air category and a hot air balloon class rating.

(1) For the private pilot certificate, the course requires eight hours of flight training that includes 5 training flights on the areas of operations under part 141, appendix B, paragraph 4(d)(8). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 1.6 hours to meet the training requirements, and use of the flight training device is limited to 1.2 hours of the 1.6 hours permitted.~~ The course must include—

- (i) Two flights of 30 minutes each; and
- (ii) One flight involving a controlled ascent to 2,000 feet above the launch site; and
- ~~(iii) Two flights within 2 calendar months before the date of the practical test.~~

(2) For the commercial pilot certificate, the course requires 10 hours of flight training that includes eight training flights on the areas of operation under part 141, appendix D, paragraph 4(d)(8). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 3 hours to meet the training requirements, and use of the flight training device is limited to 2 hours of the 3 hours permitted.~~ The course must include—

- (i) Two flights of 30 minutes each; and
- (ii) One flight involving a controlled ascent to 3,000 feet above the launch site; and

~~(iii) Two flights within 2 calendar months before the date of the practical test.~~

(h) Course for an additional powered-lift category rating.

(1) For the private pilot certificate, the course requires 20 hours flight training on the areas of operations under part 141, appendix B, paragraph 4(d)~~(5)~~. A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted.~~ The course must include—

(i) Three hours of cross country flight training in a powered-lift except as provided under § 61.111 of this chapter;

(ii) Three hours of nighttime flight training in a powered-lift that includes one cross-country flight of more than 100 nautical miles total distance, and 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and

(iii) Three hours of flight training in a powered-lift on the control and maneuvering of a powered-lift solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.

~~(iv) Three hours of flight training in a powered-lift within 2 calendar months before the date of the practical test.~~

(2) For the commercial pilot certificate, the course requires 55 hours flight training on the areas of operations under part 141, appendix D, paragraph 4(d)~~(5)~~. A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 16.5 hours to meet the training requirements, and use of the flight training device is limited to 11 hours of the 16.5 hours permitted.~~ The course includes—

(i) Five hours of instrument training in a powered-lift that must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;

(ii) One 2-hour cross country flight during daytime conditions in a powered-lift, a total straight-line distance of more than 100 nautical miles from the original point of departure; and

(iii) One 2-hour cross country flight during nighttime conditions in a powered-lift, a total straight-line distance of more than 100 nautical miles from the original point of departure; and

~~(iv) Three hours of flight training in a powered-lift within 2 calendar months before the date of the practical test.~~

(3) For the airline transport pilot certificate, the course requires 25 hours flight training in a powered-lift on the areas of operation under part 141, appendix E, paragraph 4(c) that includes 15 hours of instrument training. A flight simulation training device may be used in accordance with appendix E, paragraph 4(b). ~~A flight simulator and flight training device cannot be used more than 12.5 hours to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.~~

(i) Course for an additional glider category rating.

(1) For the private pilot certificate, the course requires 4 hours of flight training in a glider on the areas of operations under part 141, appendix B, paragraph 4(d)~~(6)~~. A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 0.8 hours to meet the training requirements, and use of the flight training device is limited to 0.6 hours of the 0.8 hours permitted.~~ The course must include—

(i) Five training flights in a glider with a certificated flight instructor on the launch/tow procedures approved for the course and on the appropriate approved areas of operation listed under appendix B, paragraph 4(d)~~(6)~~ of this part; and

~~(ii) Three training flights in a glider with a certificated flight instructor within 2 calendar months before the date of the practical test.~~

(2) The commercial pilot certificate level requires 4 hours of flight training in a glider on the areas of operation under part 141, appendix D, paragraph 4.(d)~~(6)~~. A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 0.8 hours to meet the training requirements, and use of the flight training device is limited to 0.6 hours of the 0.8 hours permitted.~~ The course must include—

(i) Five training flights in a glider with a certificated flight instructor on the launch/tow procedures approved for the course and on the appropriate approved areas of operation listed in appendix D of part 141, paragraph 4.(d)~~(6)~~; and

~~(ii) Three training flights in a glider with a certificated flight instructor in preparation for the practical test within 2 calendar months preceding the date of the test.~~

(j) Course for an airplane additional single-engine class rating.

(1) For the private pilot certificate, the course requires 3 hours of flight training in the areas of operations under part 141, appendix B, paragraph 4.(d)~~(1)~~. A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 0.6 hours to meet the training requirements, and use of the flight training device is limited to 0.4 hours of the 0.6 hours permitted.~~ The course must include—

(i) Three hours of cross country training in a single-engine airplane, except as provided under § 61.111 of this chapter;

- (ii) Three hours of nighttime flight training in a single-engine airplane that includes one cross country flight of more than 100 nautical miles total distance in a single-engine airplane and ~~10-2~~ takeoffs and ~~10-2~~ landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and
 - (iii) Three hours of flight training in a single-engine airplane on the control and maneuvering of a single-engine airplane solely by reference to instruments in instrument meteorological conditions or using a view-limiting device, or any combination thereof, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight. A portion of this training may be completed in an Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part, and
 - ~~(iv) Three hours of flight training in a single-engine airplane within 2 calendar months before the date of the practical test.~~
- (2) For the commercial pilot certificate, the course requires 10 hours of flight training on the areas of operations under part 141, appendix D, paragraph 4.(d)~~(1)~~. A flight simulation training device may be used in accordance with appendix D, paragraph 4(c).
- (i) Five hours of instrument training in a single-engine airplane that must include training in instrument meteorological conditions or using a view-limiting device (or any combination thereof) for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. A portion of this training may be completed in an Flight Simulation Training Device (FSTD) that meets the requirements of § 141.41 of this part
 - (ii) Ten hours of flight training in a complex airplane ~~that has retractable landing gear, flaps, and a controllable pitch propeller, or is a~~ turbine-powered airplane, or a technically advanced airplane that meets the requirements of § 61.129(j) of this chapter or any combination thereof.
 - ~~(iii) One 2-hour cross country flight during daytime conditions in a single-engine airplane and a total straight-line distance of more than 100 nautical miles from the original point of departure;~~
 - ~~(iv) One 2-hour cross country flight during nighttime conditions in a single-engine airplane and a total straight-line distance of more than 100 nautical miles from the original point of departure; and~~
 - ~~(v) Three hours of flight training in a single-engine airplane within 2 calendar months before the date of the practical test.~~
- (3) For the airline transport pilot certificate, the course requires 25 hours flight training in a single-engine airplane on the areas of operation under appendix E to part 141, paragraph 4.(c), that includes 15 hours of instrument training. A flight

~~simulation training device may be used in accordance with appendix E, paragraph 4(b). A flight simulator and flight training device cannot be used more than 12.5 hours to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.~~

(k) Course for an airplane additional multiengine class rating.

(1) For the private pilot certificate, the course requires 3 hours of flight training on the areas of operations of appendix B to part 141, paragraph 4(d)(2). ~~A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). A flight simulator and flight training device cannot be used more than 0.6 hours to meet the training requirements, and use of the flight training device is limited to 0.4 hours of the 0.6 hours permitted.~~ The course must include—

~~(i) Three hours of cross country training in a multiengine airplane, except as provided under § 61.111 of this chapter;~~

~~(ii) Three hours of nighttime flight training in a multiengine airplane that includes one cross country flight of more than 100 nautical miles total distance in a multiengine airplane, and 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport;~~

~~(iii) Three hours of flight training in a multiengine airplane on the control and maneuvering of a multiengine airplane solely by reference to instruments, in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must include including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.~~

~~(iv) Three hours of flight training in a multiengine airplane within 2 calendar months before the date of the practical test.~~

(2) For the commercial pilot certificate, the course requires 10 hours of training on the areas of operations under appendix D of part 141, paragraph 4(d)(2). ~~A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). A flight simulator and flight training device cannot be used more than 3 hours to meet the training requirements, and use of the flight training device is limited to 2 hours of the 3 hours permitted.~~ The course must include—

(i) ~~Five~~ Two hours of instrument training in a multiengine airplane that must include training in instrument meteorological conditions or using a view-limiting device (or any combination thereof) on for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems; and

(ii) Ten hours of training in a multiengine airplane that has retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered;

~~(iii) One 2-hour cross country flight during daytime conditions in a multiengine airplane and, a total straight-line distance of more than 100 nautical miles from the original point of departure;~~

~~(iv) One 2-hour cross country flight during nighttime conditions in a multiengine airplane and, a total straight-line distance of more than 100 nautical miles from the original point of departure; and~~

~~(v) Three hours of flight training in a multiengine airplane within 2 calendar months before the date of the practical test.~~

(3) For the airline transport pilot certificate, the course requires 25 hours of training in a multiengine airplane on the areas of operation of appendix E to part 141, paragraph 4.(c) that includes 15 hours of instrument training. Training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. A flight simulation training device may be used in accordance with appendix E, paragraph 4(b). ~~A flight simulator and flight training device cannot be used more than 12.5 hours to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.~~

(l) Course for a rotorcraft additional helicopter class rating.

(1) For the sport pilot certificate, the course requires 3 hours of flight training on the areas of operations under appendix A of part 141, paragraph 4.(c)(2) that includes—

(i) Two hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under § 61.100 of this chapter; ~~and~~

~~(ii) Three hours of flight training in a helicopter within 2 calendar months before the date of the practical test.~~

(2) For the private pilot certificate, the course requires 3 hours flight training on the areas of operations under appendix B of part 141, paragraph 4.(d)(3). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 0.6 hours to meet the training requirements, and use of the flight training device is limited to 0.4 hours of the 0.6 hours permitted.~~ The course must include—

(i) Three hours of cross country training in a helicopter, except as provided under § 61.111 of this chapter; and

(ii) Three hours of nighttime flight training in a helicopter that includes one cross country flight of more than 50 nautical miles total distance, and ~~10-2~~ takeoffs and ~~10-2~~ landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; ~~and~~

~~(iii) Three hours of flight training in a helicopter within 2 calendar months before the date of the practical test.~~

(3) For the commercial pilot certificate, the course requires 5 hours flight training on the areas of operations under appendix D of part 141, paragraph 4.(d)~~(3)~~. A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). Use of a flight simulator and flight training device in the approved training course cannot exceed 1 hour; however, use of the flight training device cannot exceed 0.7 of the one hour. The course must include—

(i) Five hours on the control and maneuvering of a helicopter solely by reference to instruments, and must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, flight simulator, flight training device, or an aviation training device;

(ii) One 2-hour cross country flight during daytime conditions in a helicopter and, a total straight-line distance of more than 50 nautical miles from the original point of departure; and

(iii) One 2-hour cross country flight during nighttime conditions in a helicopter and a total straight-line distance of more than 50 nautical miles from the original point of departure; and

~~(iv) Three hours of flight training in a helicopter within 2 calendar months before the date of the practical test.~~

(4) For the airline transport pilot certificate, the course requires 25 hours of flight training in a helicopter on the areas of operation under appendix E of part 141, paragraph 4.(c) that includes 15 hours of instrument training. Training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. A flight simulation training device may be used in accordance with appendix E, paragraph 4(b). A flight simulator and flight training device cannot be used more than 12.5 hours to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.

(m) Course for a rotorcraft additional gyroplane class rating.

(1) For the ~~recreational or~~ sport pilot certificate, the course requires 3 hours flight training on the areas of operations of appendix A to part 141, paragraph 4.(c)~~(3)~~ that includes—

(i) Except as provided under § 61.100 of this chapter, 2 hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings; and

~~(ii) Within 2 calendar months before the date of the practical test, 3 hours of flight training in a gyroplane.~~

(2) For the private pilot certificate, the course requires 3 hours flight training on the areas of operations of appendix B to part 141, paragraph 4.(d)~~(4)~~. A flight simulation training device may be used in accordance with appendix B, paragraph

~~4(c). A flight simulator and flight training device cannot be used more than 0.6 hours to meet the training requirements, and use of the flight training device is limited to 0.4 hours of the 0.6 hours permitted.~~ The course must include—

- (i) Three hours of cross country training in a gyroplane; and
- (ii) Three hours of nighttime flight training in a gyroplane that includes one cross country flight of more than 50 nautical miles total distance, and 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and

~~(iii) Three hours of flight training in a gyroplane within 2 calendar months before the date of the practical test.~~

(3) For the commercial pilot certificate, the course requires 5 hours flight training on the areas of operations of appendix D to part 141, paragraph 4.(d)~~(4). A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). A flight simulator and flight training device cannot be used more than 1 hour to meet the training requirements, and use of the flight training device is limited to 0.7 hours of the 1 hour permitted.~~ The course must include—

- (i) 2.5 hours on the control and maneuvering of a gyroplane solely by reference to instruments, and must include training in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training on for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, flight simulator, flight training device, or an aviation flight simulation training device.; and

~~(ii) Three hours of cross country flight training in a gyroplane, except as provided under § 61.111 of this chapter;~~

- ~~(iii)~~ Two hours of flight training during nighttime conditions in a gyroplane at an airport that includes 10-2 takeoffs and 10-2 landings to a full stop (with each landing involving a flight in the traffic pattern); and

~~(iv) Three hours of flight training in a gyroplane within 2 calendar months before the date of the practical test.~~

(n) Course for a lighter-than-air additional airship class rating.

(1) For the private pilot certificate, the course requires 20 hours of flight training on the areas of operation under appendix B of part 141, paragraph 4.(d)~~(7). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted.~~ The course must include—

- (i) Three hours of cross country training in an airship, except as provided under § 61.111 of this chapter;

- (ii) Three hours of nighttime flight training in an airship that includes one cross country flight of more than 25 nautical miles total distance, and 5 takeoffs and 5 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport; and
 - (iii) Three hours of flight training in an airship on the control and maneuvering of an airship solely by reference to instruments in instrument meteorological conditions or using a view-limiting device, or any combination thereof. Training must, including include straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight.; ~~and~~
 - ~~(iv) Three hours of flight training in an airship within 2 calendar months before the date of the practical test.~~
- (2) For the commercial pilot certificate, the course requires 55 hours of flight training on the areas of operation under appendix D of part 141, paragraph 4.(d)(7). A flight simulation training device may be used in accordance with appendix D paragraph 4(c). A flight simulator and flight training device cannot be used more than 16.5 hours to meet the training requirements, and use of the flight training device is limited to 11 hours of the 16.5 hours permitted. The course must include—
- (i) Three hours of instrument training in an airship in instrument meteorological conditions or that must include training using a view-limiting device, or any combination thereof. Training must includefor attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
 - (ii) One hour cross country flight during daytime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure; and
 - (iii) One hour cross country flight during nighttime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure.; ~~and~~
 - ~~(iv) Three hours of flight training in an airship within 2 calendar months before the date of the practical test.~~
- (o) Course for a lighter-than-air additional gas balloon class rating.
- (1) For the private pilot certificate, the course requires eight hours of flight training that includes 5 training flights on the areas of operations under appendix B of part 141, paragraph 4.(d)(8). A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). A flight simulator and flight training device cannot be used more than 1.6 hours to meet the training requirements, and use of the flight training device is limited to 1.2 hours of the 1.6 hours permitted. The course must include—

- (i) Two flights of 1 hour each; and
- (ii) One flight involving a controlled ascent to 3,000 feet above the launch site; and

~~(iii) Two flights within 2 calendar months before the date of the practical test.~~

(2) For the commercial pilot certificate, the course requires 10 hours of flight training that includes eight training flights on the areas of operations of appendix D to part 141, paragraph 4.(d)~~(8)~~. A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 3 hours to meet the training requirements, and use of the flight training device is limited to 2 hours of the 3 hours permitted.~~ The course must include—

- (i) Two flights of 1 hour each;
- (ii) One flight involving a controlled ascent to 5,000 feet above the launch site; and

~~(iii) Two flights within 2 calendar months before the date of the practical test.~~

(p) Course for a lighter-than-air additional hot air balloon class rating.

(1) For the private pilot certificate, the course requires 8 hours of flight training that includes 5 training flights on the areas of operations of appendix B to part 141, paragraph 4.(d)~~(8)~~. A flight simulation training device may be used in accordance with appendix B, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 1.6 hours to meet the training requirements, and use of the flight training device is limited to 1.2 hours of the 1.6 hours permitted.~~ The course must include—

- (i) Two flights of 30 minutes each; and
- (ii) One flight involving a controlled ascent to 2,000 feet above the launch site; and

~~(iii) Two flights within 2 calendar months before the date of the practical test.~~

(2) For the commercial pilot certificate, the course requires 10 hours of flight training that includes eight training flights on the areas of operation of appendix D to part 141, paragraph 4.(d)~~(8)~~. A flight simulation training device may be used in accordance with appendix D, paragraph 4(c). ~~A flight simulator and flight training device cannot be used more than 3 hours to meet the training requirements, and use of the flight training device is limited to 2 hours of the 3 hours permitted.~~ The course must include—

- (i) Two flights of 30 minutes each; and
- (ii) One flight involving a controlled ascent to 3,000 feet above the launch site; and

~~(iii) Two flights within 2 calendar months before the date of the practical test.~~

5. Stage checks and end-of-course tests.

(a) Each student enrolled in an additional aircraft category rating course or an additional aircraft class rating course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation in section No. 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies at the appropriate pilot certificate level.

(b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40909, July 30, 1997; Amdt. 141-12, 74 FR 42566, Aug. 21, 2009; Docket FAA-2016-6142, Amdt. 141-20, 83 FR 30284, June 27, 2018; Docket FAA-2022-1355, Amdt. 141-24, 87 FR 75848, Dec. 9, 2022]

Appendix ~~J~~L to Part 141—Aircraft Type Rating Course, For Other Than an Airline Transport Pilot Certificate

1. ***Applicability.*** This appendix prescribes the minimum curriculum for an aircraft type rating course other than an airline transport pilot certificate, for:

- (a) A type rating in an airplane category—single-engine class.
- (b) A type rating in an airplane category—multiengine class.
- (c) A type rating in a rotorcraft category—helicopter class.
- (d) A type rating in a powered-lift category.
- (e) Other aircraft type ratings specified by the Administrator through the aircraft type certificate procedures.

2. ***Eligibility for enrollment.*** Prior to enrolling in the flight portion of an aircraft type rating course, a person must hold at least a private pilot certificate and:

- (a) An instrument rating in the category and class of aircraft that is appropriate to the aircraft type rating for which the course applies, provided the aircraft's type certificate does not have a VFR limitation; or
- (b) Be concurrently enrolled in an instrument rating course in the category and class of aircraft that is appropriate to the aircraft type rating for which the course applies, and pass the required instrument rating practical test concurrently with the aircraft type rating practical test.

3. ***Aeronautical knowledge training.***

- (a) Each approved course must include at least 10 hours of ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the aircraft type rating for which the course applies.
- (b) Ground training must include the following aeronautical areas:

- (1) Proper control of airspeed, configuration, direction, altitude, and attitude in accordance with procedures and limitations contained in the aircraft's flight manual, checklists, or other approved material appropriate to the aircraft type;
- (2) Compliance with approved en route, instrument approach, missed approach, ATC, or other applicable procedures that apply to the aircraft type;
- (3) Subjects requiring a practical knowledge of the aircraft type and its powerplant, systems, components, operational, and performance factors;
- (4) The aircraft's normal, abnormal, and emergency procedures, and the operations and limitations relating thereto;
- (5) Appropriate provisions of the approved aircraft's flight manual;
- (6) Location of and purpose for inspecting each item on the aircraft's checklist that relates to the exterior and interior preflight; and
- (7) Use of the aircraft's prestart checklist, appropriate control system checks, starting procedures, radio and electronic equipment checks, and the selection of proper navigation and communication radio facilities and frequencies.

4. *Flight training.*

- (a) Each approved course must include at least:
 - (1) Flight training on the approved areas of operation of paragraph (c) of this section in the aircraft type for which the course applies; and
 - (2) 10 hours of training of which at least 5 hours must be instrument training in the aircraft for which the course applies.
- (b) For the use of ~~full-flight simulators or flight~~simulation training devices (FSTDs):
 - (1) The course may include training in a full flight simulator ~~or~~ flight training device, Enhanced Advanced Aviation Training Device (EAATD), Aviation Training Device (AATD), or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided it is representative of the aircraft for which the course is approved, meets requirements of this paragraph, and the training is given by an authorized instructor.
 - (2) Training in a full flight simulator that meets the requirements of § 141.41(a), may be credited for a maximum of ~~50-100~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (3) Training in a flight training device Level 6 or Level 7 that meets the requirements of § 141.41(a), may be credited for a maximum of ~~25-80~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 60 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(48) Training in ~~the full-flight simulators simulation or flight~~ training devices described in paragraphs (b)(2) and (37) of this section, if used in combination, may be credited for a maximum of ~~50-100~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. ~~However, credit training in a flight training device that meets the requirements of § 141.41(a) cannot exceed the limitation provided for in paragraph (b)(3) of this section.~~

(c) Each approved course must include the flight training on the areas of operation ~~listed specified in this paragraph, that are appropriate to the aircraft category and class rating for which the course applies:~~

(1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; ~~or A type rating for an airplane—single-engine course:~~

(2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

- (i) Preflight preparation;
- (ii) Preflight procedures;
- (iii) Takeoff and departure phase;
- (iv) In-flight maneuvers;
- (v) Instrument procedures;
- (vi) Landings and approaches to landings;
- (vii) Normal and abnormal procedures;
- (viii) Emergency procedures; and
- (ix) Postflight procedures.

(2) ~~A type rating for an airplane—multiengine course:~~

- (i) Preflight preparation;

- ~~(ii) Preflight procedures;~~
- ~~(iii) Takeoff and departure phase;~~
- ~~(iv) In-flight maneuvers;~~
- ~~(v) Instrument procedures;~~
- ~~(vi) Landings and approaches to landings;~~
- ~~(vii) Normal and abnormal procedures;~~
- ~~(viii) Emergency procedures; and~~
- ~~(ix) Postflight procedures.~~
- ~~(3) *A type rating for a powered-lift course:*~~
 - ~~(i) Preflight preparation;~~
 - ~~(ii) Preflight procedures;~~
 - ~~(iii) Takeoff and departure phase;~~
 - ~~(iv) In-flight maneuvers;~~
 - ~~(v) Instrument procedures;~~
 - ~~(vi) Landings and approaches to landings;~~
 - ~~(vii) Normal and abnormal procedures;~~
 - ~~(viii) Emergency procedures; and~~
 - ~~(ix) Postflight procedures.~~
- ~~(4) *A type rating for a rotorcraft—helicopter course:*~~
 - ~~(i) Preflight preparation;~~
 - ~~(ii) Preflight procedures;~~
 - ~~(iii) Takeoff and departure phase;~~
 - ~~(iv) In-flight maneuvers;~~
 - ~~(v) Instrument procedures;~~
 - ~~(vi) Landings and approaches to landings;~~
 - ~~(vii) Normal and abnormal procedures;~~
 - ~~(viii) Emergency procedures; and~~
 - ~~(ix) Postflight procedures.~~
- ~~(5) *Other aircraft type ratings specified by the Administrator through aircraft type certificate procedures:*~~
 - ~~(i) Preflight preparation;~~
 - ~~(ii) Preflight procedures;~~
 - ~~(iii) Takeoff and departure phase;~~
 - ~~(iv) In-flight maneuvers;~~
 - ~~(v) Instrument procedures;~~
 - ~~(vi) Landings and approaches to landings;~~
 - ~~(vii) Normal and abnormal procedures;~~
 - ~~(viii) Emergency procedures; and~~
 - ~~(ix) Postflight procedures.~~

5. Stage checks and end-of-course tests.

(a) Each student enrolled in an aircraft type rating course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation that are appropriate to the aircraft type rating for which the course applies at the airline transport pilot certificate level; and

~~(b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.~~

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40910, July 30, 1997, as amended by Docket FAA-2015-1846, Amdt. 141-18, 81 FR 21461, Apr. 12, 2016]

Appendix ~~K~~M to Part 141—Special Preparation Courses

1. ***Applicability.*** This appendix prescribes the minimum curriculum for the special preparation courses that are listed in § 141.11 of this part.

2. ***Eligibility for enrollment.*** Prior to enrolling in the flight portion of a special preparation course, a person must hold a pilot certificate, flight instructor certificate, or ground instructor certificate that is appropriate for the exercise of the operating privileges or authorizations sought.

3. ***General requirements.***

(a) To be approved, a special preparation course must:

- (1) Meet the appropriate requirements of this appendix; and
- (2) Prepare the graduate with the necessary skills, competency, and proficiency to exercise safely the privileges of the certificate, rating, or authorization for which the course is established.

(b) An approved special preparation course must include ground and flight training on the operating privileges or authorization sought, for developing competency, proficiency, resourcefulness, self-confidence, and self-reliance in the student.

4. ***Use of ~~full flight simulators~~simulation, flight training devices, or aviation training devices.***

(a) The approved special preparation course may include training in a full flight simulator, ~~or~~ flight training device, aviation training device, Enhanced Advanced Aviation Training Device (EAATD), or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided it is representative of the aircraft for which the course is approved, meets requirements of this paragraph, and the training is given by an authorized instructor. A flight instructor enhanced qualification training program may include training in an advanced aviation training device in accordance with paragraph 14 of this appendix and § 61.195(h)(3)(v) of this chapter.

(b) Except for the airline transport pilot certification program in paragraph 13 of this appendix and the flight instructor enhanced qualification training program in

paragraph 14 of this appendix, training in a full flight simulator that meets the requirements of § 141.41(a) may be credited for a maximum of ~~10-50~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(c) Except for the airline transport pilot certification program in paragraph 13 of this appendix and the flight instructor enhanced qualification training program in paragraph 14 of this appendix, training in a flight training device level 6 and level 7 that meets the requirements of § 141.41(a), may be credited for a maximum of 35 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(d) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(e) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(f) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 150 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(g) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(dh) Training in the full flight simulators or flight training devices described in paragraphs (b) ~~and through (eg)~~ of this section, if used in combination, may be credited for a maximum of ~~10-50~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. ~~However, credit for training in a flight training device that meets the requirements of § 141.41(a) cannot exceed the limitation provided for in paragraph (c) of this section.~~

5. Stage check and end-of-course tests. Each person enrolled in a special preparation course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas

of operation that are appropriate to the operating privileges or authorization sought, and for which the course applies.

6. ***Agricultural aircraft operations course.*** An approved special preparation course for pilots in agricultural aircraft operations must include at least the following—

(a) 25 hours of training on:

- (1) Agricultural aircraft operations;
- (2) Safe piloting and operating practices and procedures for handling, dispensing, and disposing of agricultural and industrial chemicals, including operating in and around congested areas; and
- (3) Applicable provisions of part 137 of this chapter.

(b) 15 hours of flight training on agricultural aircraft operations.

7. ***Rotorcraft external-load operations course.*** An approved special preparation course for pilots of external-load operations must include at least the following—

(a) 10 hours of training on:

- (1) Rotorcraft external-load operations;
- (2) Safe piloting and operating practices and procedures for external-load operations, including operating in and around congested areas; and
- (3) Applicable provisions of part 133 of this chapter.

(b) 15 hours of flight training on external-load operations.

8. ***Test pilot course.*** An approved special preparation course for pilots in test pilot duties must include at least the following—

(a) Aeronautical knowledge training on:

- (1) Performing aircraft maintenance, quality assurance, and certification test flight operations;
- (2) Safe piloting and operating practices and procedures for performing aircraft maintenance, quality assurance, and certification test flight operations;
- (3) Applicable parts of this chapter that pertain to aircraft maintenance, quality assurance, and certification tests; and
- (4) Test pilot duties and responsibilities.

(b) 15 hours of flight training on test pilot duties and responsibilities.

9. ***Special operations course.*** An approved special preparation course for pilots in special operations that are mission-specific for certain aircraft must include at least the following—

(a) Aeronautical knowledge training on:

- (1) Performing that special flight operation;
- (2) Safe piloting operating practices and procedures for performing that special flight operation;
- (3) Applicable parts of this chapter that pertain to that special flight operation; and
- (4) Pilot-in-command duties and responsibilities for performing that special flight operation.

(b) Flight training:

- (1) On that special flight operation; and
- (2) To develop skills, competency, proficiency, resourcefulness, self-confidence, and self-reliance in the student for performing that special flight operation in a safe manner.

10. **Pilot refresher course.** An approved special preparation pilot refresher course for a pilot certificate, aircraft category and class rating, or an instrument rating must include at least the following—

(a) 4 hours of aeronautical knowledge training on:

- (1) The aeronautical knowledge areas that are applicable to the level of pilot certificate, aircraft category and class rating, or instrument rating, as appropriate, that pertain to that course;
- (2) Safe piloting operating practices and procedures; and
- (3) Applicable provisions of parts 61 and 91 of this chapter for pilots.

(b) 6 hours of flight training on the approved areas of operation that are applicable to the level of pilot certificate, aircraft category and class rating, or instrument rating, as appropriate, for performing pilot-in-command duties and responsibilities.

11. **Flight instructor refresher course.** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety. ~~An an~~ approved special preparation flight instructor refresher course must include at least a combined total of 16 hours of aeronautical knowledge training, flight training, or any combination of ground and flight training on the following—

(a) Aeronautical knowledge training on:

- (1) The aeronautical knowledge areas of part 61 of this chapter that apply to student, ~~recreational~~, sport, private, and commercial pilot certificates and instrument ratings;
- (2) The aeronautical knowledge areas of part 61 of this chapter that apply to flight instructor certificates;
- (3) Safe piloting operating practices and procedures, including airport operations and operating in the National Airspace System; and
- (4) Applicable provisions of parts 61 and 91 of this chapter that apply to pilots and flight instructors.

(b) Flight training to review:

- (1) The approved areas of operations applicable to student, ~~recreational~~, sport, private, and commercial pilot certificates and instrument ratings; and
- (2) The skills, competency, and proficiency for performing flight instructor duties and responsibilities.

12. **Ground instructor refresher course.** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of

quality. ~~An~~ approved special preparation ground instructor refresher course must include at least 16 hours of aeronautical knowledge training on:

- (a) The aeronautical knowledge areas of part 61 of this chapter that apply to student, ~~recreational,~~ sport, private, and commercial pilots and instrument rated pilots;
- (b) The aeronautical knowledge areas of part 61 of this chapter that apply to ground instructors;
- (c) Safe piloting operating practices and procedures, including airport operations and operating in the National Airspace System; and
- (d) Applicable provisions of parts 61 and 91 of this chapter that apply to pilots and ground instructors.

~~13. Airline transport pilot certification training program. An approved airline transport pilot certification training program must include the academic and FSTD training set forth in § 61.156 of this chapter. The FAA will not approve a course with fewer hours than those prescribed in § 61.156 of this chapter.~~

134. Flight instructor enhanced qualification training program. An approved flight instructor enhanced qualification training program must include the ground and flight training specified in § 61.195(h)(3) of this chapter. The FAA will not approve a course with fewer hours than those prescribed in § 61.195(h)(3) of this chapter.

[Docket 25910, 62 FR 16347, Apr. 4, 1997; Amdt. 141-9, 62 FR 40910, July 30, 1997, as amended by Amdt. 141-17, 78 FR 42380, July 15, 2013; Amdt. 141-17A, 78 FR 53026, Aug. 28, 2013; Docket FAA-2015-1846, Amdt. 141-18, 81 FR 21462, Apr. 12, 2016; Docket FAA-2023-0825, Amdt. 141-25, 89 FR 80054, Oct. 1, 2024]

Appendix ~~L-N~~ to Part 141—Pilot Ground School Course

1. **Applicability.** This appendix prescribes the minimum curriculum for a pilot ground school course required under this part.
2. **General requirements.** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of quality. ~~An~~ approved course of training for a pilot ground school must include training on the aeronautical knowledge areas that are:
 - (a) Needed to safely exercise the privileges of the certificate, rating, or authority for which the course is established; and
 - (b) Conducted to develop competency, proficiency, resourcefulness, self-confidence, and self-reliance in each student.
3. **Aeronautical knowledge training requirements.** Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of quality. ~~Each~~ approved pilot ground school course must include:
 - (a) The aeronautical knowledge training that is appropriate to the aircraft rating and pilot certificate level for which the course applies; and

- (b) An adequate number of total aeronautical knowledge training hours appropriate to the aircraft rating and pilot certificate level for which the course applies.
4. ***Stage checks and end-of-course tests.*** Each person enrolled in a pilot ground school course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation that are appropriate to the operating privileges or authorization that graduation from the course will permit and for which the course applies.

Appendix ~~M-O~~ to Part 141—Combined Private Pilot Certification and Instrument Rating Course

1. ***Applicability.*** This appendix prescribes the minimum curriculum for a combined private pilot certification and instrument rating course required under this part, for the following ratings:
 - (a) Airplane.
 - (1) Airplane single-engine.
 - (2) Airplane multiengine.
 - (b) Rotorcraft helicopter.
 - (c) Powered-lift.
2. ***Eligibility for enrollment.*** A person must hold a sport pilot, recreational pilot, or student pilot certificate prior to enrolling in the flight portion of a combined private pilot certification and instrument rating course.
3. ***Aeronautical knowledge training.***
 - (a) Each approved course must include at least 65 hours of ground training on the aeronautical knowledge areas listed-referenced in paragraph (b) of this section that are appropriate to the aircraft category and class rating of the course:
 - (b) Ground training must include the ~~following~~ aeronautical knowledge areas:
 - (1) Specified in the Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) Specified in a consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.~~Applicable Federal Aviation Regulations for private pilot privileges, limitations, flight operations, and instrument flight rules (IFR) flight operations.~~
 - (2) ~~Accident reporting requirements of the National Transportation Safety Board.~~
 - (3) ~~Applicable subjects of the “Aeronautical Information Manual” and the appropriate FAA advisory circulars.~~
 - (4) ~~Aeronautical charts for visual flight rules (VFR) navigation using pilotage, dead reckoning, and navigation systems.~~
 - (5) ~~Radio communication procedures.~~

- ~~(6) Recognition of critical weather situations from the ground and in flight, windshear avoidance, and the procurement and use of aeronautical weather reports and forecasts.~~
- ~~(7) Safe and efficient operation of aircraft under instrument flight rules and conditions.~~
- ~~(8) Collision avoidance and recognition and avoidance of wake turbulence.~~
- ~~(9) Effects of density altitude on takeoff and climb performance.~~
- ~~(10) Weight and balance computations.~~
- ~~(11) Principles of aerodynamics, powerplants, and aircraft systems.~~
- ~~(12) If the course of training is for an airplane category, stall awareness, spin entry, spins, and spin recovery techniques.~~
- ~~(13) Air traffic control system and procedures for instrument flight operations.~~
- ~~(14) IFR navigation and approaches by use of navigation systems.~~
- ~~(15) Use of IFR en route and instrument approach procedure charts.~~
- ~~(16) Aeronautical decision-making and judgment.~~
- ~~(17) Preflight action that includes—~~
 - ~~(i) How to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements.~~
 - ~~(ii) How to plan for alternatives if the planned flight cannot be completed or delays are encountered.~~
 - ~~(iii) Procurement and use of aviation weather reports and forecasts, and the elements of forecasting weather trends on the basis of that information and personal observation of weather conditions.~~

4. **Flight training.**

- (a) Each approved course must include at least 70 hours of training, as described in section 4 and section 5 of this appendix, on the approved areas of operation listed in paragraph (d) of section 4 of this appendix that are appropriate to the aircraft category and class rating of the course:
- (b) Each approved course must include at least the following flight training:
 - (1) ***For an airplane single-engine course:*** 70 hours of flight training from an authorized instructor on the approved areas of operation in paragraph (d) ~~(4)~~ of this section that includes at least—
 - (i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a single-engine airplane.
 - (ii) 3 hours of night flight training in a single-engine airplane that includes—
 - (A) One cross-country flight of more than 100 nautical miles total distance.
 - (B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(iii) 35 hours of instrument flight training in a single-engine airplane that includes at least one cross-country flight that is performed under IFR and—

(A) Is a distance of at least 250 nautical miles along airways or air traffic control-directed (ATC-directed) routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports.

(B) Involves an instrument approach at each airport.

(C) Involves three different kinds of approaches with the use of navigation systems.

~~(iv) 3 hours of flight training in a single-engine airplane in preparation for the practical test within 60 days preceding the date of the test.~~

(2) ***For an airplane multiengine course:*** 70 hours of training from an authorized instructor on the approved areas of operation in paragraph (d) ~~(2)~~ of this section that includes at least—

(i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a multiengine airplane.

(ii) 3 hours of night flight training in a multiengine airplane that includes—

(A) One cross-country flight of more than 100 nautical miles total distance.

(B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(iii) 35 hours of instrument flight training in a multiengine airplane that includes at least one cross-country flight that is performed under IFR and—

(A) Is a distance of at least 250 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports.

(B) Involves an instrument approach at each airport.

(C) Involves three different kinds of approaches with the use of navigation systems.

~~(iv) 3 hours of flight training in a multiengine airplane in preparation for the practical test within 60 days preceding the date of the test.~~

(3) ***For a rotorcraft helicopter course:*** 70 hours of training from an authorized instructor on the approved areas of operation in paragraph (d) ~~(3)~~ of this section that includes at least—

(i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a helicopter.

(ii) 3 hours of night flight training in a helicopter that includes—

(A) One cross-country flight of more than 50 nautical miles total distance.

(B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

- (iii) 35 hours of instrument flight training in a helicopter that includes at least one cross-country flight that is performed under IFR and—
 - (A) Is a distance of at least 100 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 50 nautical miles between airports.
 - (B) Involves an instrument approach at each airport.
 - (C) Involves three different kinds of approaches with the use of navigation systems.
- ~~(iv) 3 hours of flight training in a helicopter in preparation for the practical test within 60 days preceding the date of the test.~~
- (4) ***For a powered-lift course:*** 70 hours of training from an authorized instructor on the approved areas of operation in paragraph (d) ~~(4)~~ of this section that includes at least—
 - (i) Except as provided in § 61.111 of this chapter, 3 hours of cross-country flight training in a powered-lift.
 - (ii) 3 hours of night flight training in a powered-lift that includes—
 - (A) One cross-country flight of more than 100 nautical miles total distance.
 - (B) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
 - (iii) 35 hours of instrument flight training in a powered-lift that includes at least one cross-country flight that is performed under IFR and—
 - (A) Is a distance of at least 250 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports.
 - (B) Involves an instrument approach at each airport.
 - (C) Involves three different kinds of approaches with the use of navigation systems.
 - ~~(iv) 3 hours of flight training in a powered-lift in preparation for the practical test, within 60 days preceding the date of the test.~~
- (c) For use of ~~full-flight simulators simulation or flight~~ training devices (**FSTDs**):
 - (1) The course may include training in a combination of full flight simulators, flight training devices, ~~and~~ aviation training devices, Enhanced Advanced Aviation Training Devices, or Extended Reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, provided it is representative of the aircraft for which the course is approved, meets the requirements of this section, and the training is given by an authorized instructor.
 - (2) Training in a full flight simulator that meets the requirements of § 141.41(a) may be credited for a maximum of ~~35–65~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(3) Training in a flight training device level 6 or level 7 that meets the requirements of § 141.41(a) or an aviation training device that meets the requirements of § 141.41(b) may be credited for a maximum of ~~25-60~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(4) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(5) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 30 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(6) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(7) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(48) Training in a combination of flight simulators, flight training devices, or aviation training devices, described in paragraphs (c)(2) ~~and through (37)~~ of this section, may be credited for a maximum of ~~35-65~~ percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. However, credit for training in a flight training device and aviation training device, that meets the requirements of § 141.41(b), cannot exceed the limitation provided for in paragraph (c)(3) of this section.

(d) Each approved course must include the flight training on the approved areas of operation ~~listed specified in: in this section that are appropriate to the aircraft category and class rating course—~~

(1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or

(2) Specified in a consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

~~***For a combined private pilot certification and instrument rating course involving a single-engine airplane:***~~

- ~~(i) Preflight preparation:~~
- ~~(ii) Preflight procedures:~~
- ~~(iii) Airport and seaplane base operations:~~
- ~~(iv) Takeoffs, landings, and go-arounds:~~
- ~~(v) Performance maneuvers:~~
- ~~(vi) Ground reference maneuvers:~~
- ~~(vii) Navigation and navigation systems:~~
- ~~(viii) Slow flight and stalls:~~
- ~~(ix) Basic instrument maneuvers and flight by reference to instruments:~~
- ~~(x) Instrument approach procedures:~~
- ~~(xi) Air traffic control clearances and procedures:~~
- ~~(xii) Emergency operations:~~
- ~~(xiii) Night operations:~~
- ~~(xiv) Postflight procedures:~~

~~***(2) For a combined private pilot certification and instrument rating course involving a multiengine airplane:***~~

- ~~(i) Preflight preparation:~~
- ~~(ii) Preflight procedures:~~
- ~~(iii) Airport and seaplane base operations:~~
- ~~(iv) Takeoffs, landings, and go-arounds:~~
- ~~(v) Performance maneuvers:~~
- ~~(vi) Ground reference maneuvers:~~
- ~~(vii) Navigation and navigation systems:~~
- ~~(viii) Slow flight and stalls:~~
- ~~(ix) Basic instrument maneuvers and flight by reference to instruments:~~
- ~~(x) Instrument approach procedures:~~
- ~~(xi) Air traffic control clearances and procedures:~~
- ~~(xii) Emergency operations:~~
- ~~(xiii) Multiengine operations:~~
- ~~(xiv) Night operations:~~
- ~~(xv) Postflight procedures:~~

~~***(3) For a combined private pilot certification and instrument rating course involving a rotorcraft helicopter:***~~

- ~~(i) Preflight preparation:~~
- ~~(ii) Preflight procedures:~~
- ~~(iii) Airport and heliport operations:~~
- ~~(iv) Hovering maneuvers:~~
- ~~(v) Takeoffs, landings, and go-arounds:~~

- ~~(vi) Performance maneuvers.~~
- ~~(vii) Navigation and navigation systems.~~
- ~~(viii) Basic instrument maneuvers and flight by reference to instruments.~~
- ~~(ix) Instrument approach procedures.~~
- ~~(x) Air traffic control clearances and procedures.~~
- ~~(xi) Emergency operations.~~
- ~~(xii) Night operations.~~
- ~~(xiii) Postflight procedures.~~
- ~~(4) ***For a combined private pilot certification and instrument rating course involving a powered-lift:***~~
 - ~~(i) Preflight preparation.~~
 - ~~(ii) Preflight procedures.~~
 - ~~(iii) Airport and heliport operations.~~
 - ~~(iv) Hovering maneuvers.~~
 - ~~(v) Takeoffs, landings, and go-arounds.~~
 - ~~(vi) Performance maneuvers.~~
 - ~~(vii) Ground reference maneuvers.~~
 - ~~(viii) Navigation and navigation systems.~~
 - ~~(ix) Slow flight and stalls.~~
 - ~~(x) Basic instrument maneuvers and flight by reference to instruments.~~
 - ~~(xi) Instrument approach procedures.~~
 - ~~(xii) Air traffic control clearances and procedures.~~
 - ~~(xiii) Emergency operations.~~
 - ~~(xiv) Night operations.~~
 - ~~(xv) Postflight procedures.~~

5. ***Solo flight training.*** Each approved course must include at least the following solo flight training:

- (a) ***For a combined private pilot certification and instrument rating course involving an airplane single-engine:*** Five hours of flying solo in a single-engine airplane on the appropriate areas of operation in paragraph (d)(~~H~~) of section 4 of this appendix that includes at least—
 - (1) One solo cross-country flight of at least 100 nautical miles with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles between the takeoff and landing locations.
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (b) ***For a combined private pilot certification and instrument rating course involving an airplane multiengine:*** Five hours of flying solo in a multiengine airplane or 5 hours of performing the duties of a pilot-in-command while under the supervision of an authorized instructor. The training must consist of the appropriate

areas of operation in paragraph (d)(2) of section 4 of this appendix, and include at least—

(1) One cross-country flight of at least 100 nautical miles with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles between the takeoff and landing locations.

(2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(c) ***For a combined private pilot certification and instrument rating course involving a helicopter:*** Five hours of flying solo in a helicopter on the appropriate areas of operation in paragraph (d)(3) of section 4 of this appendix that includes at least—

(1) One solo cross-country flight of more than 50 nautical miles with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 25 nautical miles between the takeoff and landing locations.

(2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(d) ***For a combined private pilot certification and instrument rating course involving a powered-lift:*** Five hours of flying solo in a powered-lift on the appropriate areas of operation in paragraph (d)(4) of section 4 of this appendix that includes at least—

(1) One solo cross-country flight of at least 100 nautical miles with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles between the takeoff and landing locations.

(2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

6. *Stage checks and end-of-course tests.*

(a) Each student enrolled in a private pilot course must satisfactorily accomplish the stage checks and end-of-course tests in accordance with the school's approved training course that consists of the approved areas of operation listed in paragraph (d) of section 4 of this appendix that are appropriate to the aircraft category and class rating for which the course applies.

(b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

[Docket FAA-2008-0938, 76 FR 54108, Aug. 31, 2011, as amended by Docket FAA-2015-1846, Amdt. 141-18, 81 FR 21462, Apr. 12, 2016]

Appendix P to Part 141- Professional Pilot Track

Applicability. This appendix prescribes the minimum curriculum for a *Professional track Program* in the airplane category, designed to develop professional pilot knowledge, skills, and operational discipline consistent with airline and corporate flight standards.

General. A Professional Pilot track curriculum requires:

1. Courses for the following FAA certifications and ratings:
 - a. Private Pilot (Single-Engine Land)
 - b. Instrument Rating
 - c. Commercial Pilot (Single-Engine Land)
 - d. Commercial Pilot Multi-Engine Additional Rating
2. A minimum total of 200 hours of flight training across all courses in the Professional Pilot Track.
3. Industry Advisory Board Feedback
 - (a) Each Professional Track program must include a process for obtaining regular input from an Industry Advisory Board (IAB) to ensure that training remains aligned with current aviation industry needs and professional standards.
 - (b) The IAB should include representatives from aviation sectors relevant to the course, such as airlines, corporate flight operations, manufacturers, maintenance organizations, or professional associations, and may also include graduates currently employed in industry roles.
 - (c) The IAB must meet at least once each year to review:
 - (1) Current and emerging trends in flight operations, safety, and technology;
 - (2) Industry feedback on graduate performance and professional readiness;and
 - (3) Recommendations for improvements to course content, instructional methods, and assessment standards.
 - (d) The school must document each meeting and summarize the feedback received, along with any resulting curriculum adjustments or action items. This record must be retained and made available for FAA review.
 - (e) Feedback from the IAB must be formally reviewed during each curriculum revision cycle. The school must evaluate the relevance and applicability of all recommendations and incorporate appropriate updates to course objectives, content, or training methods to ensure that the curriculum remains current, industry-driven, and outcome-focused.
4. Unless otherwise determined through consensus standards approved by the Administrator for use of Flight Simulators Training Devices (FSTDs):
 - (a) The Professional Pilot Track courses may include training in a full flight simulator, flight training device, aviation training devices, Enhanced Advanced Aviation Training Devices (EAATD), or extended reality (XR) training system, provided the device or system is approved or authorized by the Administrator in accordance with § 141.41, it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.

(b) Training in a full flight simulator that meets the requirements of § 141.41(a) may be credited for a maximum of 60 percent of the total flight training hour requirements of the Professional Pilot Track.

(c) Training in a Flight Training Device (FTD) level 6 or level 7 that meets the requirements of § 141.41(a) may be credited for a maximum of 55 percent of the total flight training hour requirements of the Professional Pilot Track.

(d) Training in an Enhanced Advanced Aviation Training Device (EAATD) that meets the requirements of § 141.41(c), or a Flight Training Device (FTD) Level 5 that meets the requirements of § 141.41(a), may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(e) Training conducted in an Advanced Aviation Training Device (AATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 45 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(f) Training conducted in a Basic Aviation Training Device (BATD) that is approved and authorized in accordance with § 141.41(b) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(g) Training conducted in an Extended Reality (XR) training system, including virtual reality (VR), augmented reality (AR), or mixed reality (MR), that is approved, authorized, or validated in accordance with § 141.41(d) may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less, and only for those tasks and credit specifically authorized by the Administrator.

(h) Training in FSTDs described in paragraphs (4)(a) through (g) of this section, if used in combination, may be credited for a maximum of 60 percent of the total flight training hour requirements of the Professional Pilot Track.

Appendix P.1 Professional Track Private Pilot Course (airplane Single—Engine Land)

1. **Eligibility for enrollment.** A person must hold a student pilot certificate before enrolling in the solo flight phase of the course.
2. **Aeronautical knowledge training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 35 hours of ground training on the aeronautical knowledge areas specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or

- (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
- (b) In addition, ground training must include:
 - (1) Use of professional standard operating procedures (SOPs), checklist flows, and callouts;
 - (2) Application of threat-and-error management (TEM) and risk assessment models;
 - (3) Human performance and limitations, including fatigue and workload management;
 - (4) Safety Management Systems
 - (5) Weather interpretation for strategic and tactical decision-making; and
 - (6) Professional communication, briefing, and debriefing techniques.
- 3. **Flight training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 35 hours of flight training on the approved areas of operation specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
 - (b) In addition, the course must emphasize:
 - (1) Precision aircraft control using designed flight profiles;
 - (2) Scenario training and experiences to build aeronautical decision making skills;
 - (3) Integration of automation management, avionics use, and situational awareness; and
 - (4) Use of checklists, flows, callouts, briefings, and standard phraseology.
- 4. Solo flight training. Each approved course must include at least the following solo flight training:
 - a. For an airplane single-engine course: 5 hours of solo flight training in a single-engine airplane on the approved areas of operation in paragraph (d)(1) of section No. 4 of this appendix that includes at least—
 - (1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations; and

(2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

5. *Stage checks and end-of-course tests.*

(a) Each student enrolled in a private pilot course must satisfactorily accomplish the stage checks and end-of-course tests in accordance with the school's approved training course, consisting of the approved areas of operation listed in section 2(b) and 3(b) of this appendix that are appropriate to the aircraft category and class rating for which the course applies.

(b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix P.2 Professional Track Instrument Rating Course (Airplane Single-Engine)

1. **Applicability.** This appendix prescribes the minimum curriculum for a Professional Track Instrument Rating Course designed to integrate advanced procedural proficiency, automation management, and professional communication practices.

2. **Eligibility for enrollment.** A person must—

(a) Hold a Private Pilot Certificate with an Airplane Single-Engine class rating; and

(b) Have completed ground and flight training through an FAA-approved Professional Track Private Pilot (Airplane Single-Engine) Course.

3. **Aeronautical knowledge training.**

a. Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 30 hours of knowledge training on the approved areas of operation specified in:

(1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or

(2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

(b) In addition, the course must emphasize:

(1) Crew resource management (CRM) principles;

(2) Technically Advanced Aircraft (TAA) Systems

(3) Scenario-based risk management in IMC; and

(4) Automation Management and Mode Awareness

(5) Use of advanced avionics and flight management systems.

6. **Flight training.**

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved

course must include at least 35 hours of flight training on the approved areas of operation specified in:

(1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or

(2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

(b) In addition, the course must emphasize:

(1) Automation and Mode Awareness under IFR;

2. Advanced navigation procedures (RNAV, LPV, and SID/STAR operations);

3. Scenario-Based LOFT-Style IFR Missions; and

(4) An emphasis on maintaining professional discipline, procedural accuracy, and workload management throughout all phases of instrument flight.

7. Stage checks and end-of-course tests.

Each student must demonstrate proficiency in instrument procedures and professional crew coordination equivalent to the standards for commercial operations.

Appendix P.3 Professional Track Commercial Pilot Certification Course (Airplane Single-Engine or Multi-Engine)

1. **Applicability.** This appendix prescribes the minimum curriculum for a *Professional Track Commercial Pilot Certification Course* in the airplane single-engine category for applicants who have completed the Professional Track Private Pilot and Professional Track Instrument Rating courses.

2. **Eligibility for enrollment.** A person must—

(a) Hold a Private Pilot Certificate with an Airplane Single-Engine class and Instrument Rating; and

(b) Have completed ground and flight training through an FAA-approved Professional Track Private Pilot (Airplane Single-Engine) Course; and

(c) Have completed ground and flight training through an FAA-approved Professional Track Instrument Rating Course.

3. **Aeronautical knowledge training.**

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 35 hours of knowledge training on the approved areas of operation specified in:

(1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or

(2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

(b) In addition, the course must include:

- (1) Professional flight operations and standardization;
- (2) Energy management and aircraft performance analysis;
- (3) Human factors in high-performance environments; and
- (4) Scenario training for risk-based decision-making in commercial operations;
- (5) Cognitive load theory; and
- (6) Startle effect & stress response.

4. **Flight training.**

(a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 65 hours of training on the areas of operation specified in:

- (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
- (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.

(b) For an airplane single-engine course:

(1) 55 hours of flight training from a certificated flight instructor on the applicable areas of operation listed in paragraph (a) of this section that includes at least

- (i) Ten hours of instrument training in instrument meteorological conditions or using a view-limiting device including attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. Five hours of the 10 hours required on instrument training must be in a single-engine airplane;
- (ii) Ten hours of training in a complex airplane, a turbine-powered airplane, or a technically advanced airplane that meets the requirements of § 61.129(j) of this chapter, or any combination thereof. The airplane must be appropriate to for the rating sought;
- (iii) One 2-hour cross country flight in daytime conditions in a single-engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure;
- (iv) One 2-hour cross country flight in nighttime conditions in a single-engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; and
- (v) 10 total takeoff and landings at an airport with an operating control tower.

(c) For an airplane multi-engine course:

(1) 55 hours of flight training from a certificated flight instructor on the applicable areas of operation listed in paragraph (a) of this section that includes at least:

- (i) Ten hours of instrument training in instrument meteorological conditions or using a view-limiting device including attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. Five hours of the 10 hours required on instrument training must be in a multi-engine airplane;
- (ii) Ten hours of training in a complex airplane, a turbine-powered airplane, or a technically advanced airplane that meets the requirements of § 61.129(j) of this chapter, or any combination thereof. The airplane must be appropriate to for the rating sought;
- (iii) One 2-hour cross country flight in daytime conditions in a multi-engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure;
- (iv) One 2-hour cross country flight in nighttime conditions in a multi-engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; and
- (v) 10 total takeoff and landings at an airport with an operating control tower.

(d) Training must also include:

- (1) Advanced cross country training;
- (2) Use of checklists, flows, callouts, briefings, and standard phraseology.
- (3) Management of automation, performance, and workload under realistic operational scenarios;
- (4) Application of SOPs, profiles, and professional airmanship throughout; and
- (5) Realistic emergency scenario training and experience.

5. Solo training. Each approved course must include at least the following solo flight training:

- (a) For an airplane single-engine course. Ten hours of solo flight time in a single-engine airplane, or 10 hours of flight time while performing the duties of pilot-in-command in a single-engine airplane with an authorized instructor on board, or any combination thereof. The training must consist

of the approved areas of operation under Appendix D § 4(d), and include—

- (1) One cross-country flight of not less than 300 nautical miles total distance, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii, the longest segment need only have a straight-line distance of at least 150 nautical miles;
 - (2) 5 hours in night VFR conditions with 2 takeoffs and 2 landings; and
 - (3) 10 total takeoffs and 10 landings at an airport with an operating control tower.
- (b) For an airplane multi-engine course. Ten hours of solo flight time in a multi-engine airplane, or 10 hours of flight time while performing the duties of pilot-in-command in a multi-engine airplane with an authorized instructor on board, or any combination thereof. The training must consist of the approved areas of operation under Appendix D § 4(d), and include—
- (1) One cross-country flight of not less than 300 nautical miles total distance, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii, the longest segment need only have a straight-line distance of at least 150 nautical miles;
 - (2) 5 hours in night VFR conditions with 2 takeoffs and 2 landings; and
 - (3) 10 total takeoffs and 10 total landings at an airport with an operating control tower.

6. **Stage checks and end-of-course tests.**

Each student must demonstrate commercial-level mastery of the areas of operation and professional standards of discipline and decision-making equivalent to those expected in multi-crew or corporate environments.

Appendix P.4 - Professional Track Commercial Pilot Additional Class (Single-Engine or Multi Engine) Course

1. **Applicability.** This appendix prescribes the minimum curriculum for a Professional Track Commercial Pilot Additional Class (Single-Engine or Multi-Engine) Course for applicants who hold a Commercial Pilot Certificate and seeking to add an additional class rating.
2. **Eligibility for enrollment.** A person must—
 - (a) Hold a Commercial Pilot Certificate;

- (b) Have completed ground and flight training through an FAA-approved Professional Track Private Pilot (Airplane Single-Engine) Course;
 - (c) Have completed ground and flight training through an FAA-approved Professional Track Instrument Rating Course; and
 - (d) Have completed ground and flight training through an FAA-approved Professional Track Commercial Pilot (Airplane Single-Engine or Multi-Engine) Course.
- 3. **Aeronautical knowledge training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 15 hours of knowledge training on the approved areas of operation specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
 - (b) In addition, the course must include:
 - (1) Advanced Automation & Mode Management
 - (2) Advanced cross country performance planning; and
 - (3) High altitude multi-engine aerodynamics.
- 4. **Flight training.**
 - (a) Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved course must include at least 10 hours of flight training on the approved areas of operation specified in:
 - (1) The Airman Certification Standards (ACS) appropriate to the aircraft category and class rating for which the course applies; or
 - (2) A consensus standard that has been accepted by the Administrator, appropriate to the aircraft category and class rating for which the course applies.
 - (b) In addition, the course must include:
 - (1) Management of automation, performance, and workload under realistic operational scenarios;
 - (2) Application of SOPs, profiles, and professional airmanship throughout; and
 - (3) Realistic emergency scenario training and experience.
- 5. **Stage checks and end-of-course tests.**
 - Each student must demonstrate commercial-level mastery of the areas of operation and professional standards of discipline and decision-making equivalent to those expected in multi-crew or corporate environments.

Appendix Q to Part 141—Airline Transport Pilot Certification Training Program (ATP CTP)

1. Applicability. This appendix prescribes the minimum curriculum requirements for an Airline Transport Pilot Certification Training Program (ATP CTP) conducted under this part. The course is designed to satisfy the training requirements of § 61.156 and to prepare applicants for the Airline Transport Pilot Airplane Multiengine knowledge test.

2. Eligibility for Enrollment.

(a) Each applicant must meet the enrollment prerequisites specified in the approved training course outline.

(b) A person may not be issued an ATP CTP graduation certificate unless that person meets the eligibility requirements of § 61.156 applicable to the Airline Transport Pilot Airplane Multiengine knowledge test.

3. Aeronautical Knowledge Training.

(a) Minimum Hours. Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved ATP CTP course must include at least 30 hours of academic instruction.

(b) Required Aeronautical Knowledge Areas. Ground training must include the knowledge areas specified in § 61.156(a), including:

1. Aerodynamics (minimum 8 hours), including high-altitude operations;
2. Meteorology (minimum 2 hours), including adverse weather phenomena and weather detection systems;
3. Air carrier operations (minimum 14 hours), including at least:
 - Physiology;
 - Communications;
 - Checklist philosophy;
 - Operational control;
 - Minimum Equipment List/Configuration Deviation List concepts;
 - Ground operations;
 - Turbine engines;
 - Transport-category aircraft performance;
 - Automation, navigation, and flight path warning systems; and
4. Leadership, professional development, crew resource management, and safety culture (minimum 6 hours).

4. Flight Simulation Training.

(a) Minimum Hours. Each approved ATP CTP course must include:

1. At least 10 hours of flight simulation training; and
2. At least 6 of those hours must be conducted in a Level C or higher full flight simulator.

(b) Authorized Training Devices. Training must be conducted in:

1. A Level C or higher full flight simulator meeting § 141.41(a); and
2. A full flight simulator or Level 6 or Level 7 Flight Training Device meeting § 141.41(a) for any remaining required simulator time.

(c) Required Areas of Operation. Flight simulation training must include:

1. Stall prevention and recovery;
2. Upset prevention and recovery;
3. High-altitude operations;
4. Advanced automation management and mode awareness;
5. Abnormal and emergency procedures; and
6. Scenario-based exercises representative of transport-category aircraft operations.

5. Assessment and Completion Standards.

(a) Each student must:

1. Successfully complete all required academic instruction;
2. Successfully complete all required flight simulation training; and
3. Demonstrate satisfactory knowledge and participation as specified in the approved training course outline.

(b) The certificate holder must verify that each applicant has completed:

1. At least 30 hours of academic instruction; and
2. At least 10 hours of flight simulation training, including at least 6 hours in a Level C or higher full flight simulator.

(c) Upon satisfactory completion of the requirements of this appendix, the certificate holder must issue a graduation certificate in accordance with § 61.156.

(d) Completion of the ATP CTP course and issuance of the graduation certificate renders the applicant eligible to take the Airline Transport Pilot Airplane Multiengine knowledge test in accordance with § 61.156.

6. Instructor Qualifications.

(a) Each instructor providing academic or flight simulation training under this appendix must:

1. Hold an Airline Transport Pilot certificate with an airplane multiengine class rating; and
2. Have at least two years of air carrier experience as—
 - (i) Pilot-in-command in operations conducted under § 91.1053(a)(2)(i) or § 135.243(a)(1); or
 - (ii) Pilot-in-command or second in command in operations conducted under part 121; and
3. Be qualified to instruct under the applicable operating part.

(b) Instructors conducting flight simulation training must:

1. Hold an appropriate airplane type rating for the airplane represented by the simulator;
2. Have completed initial and recurrent training in the proper operation of the simulator or flight training device; and

3. Be familiar with the data, limitations, and performance characteristics of the training device used.

(c) Subject matter experts may provide instruction in specialized academic subjects provided that an instructor meeting paragraph (a) of this section is present and responsible for the conduct of the training.

Appendix R to Part 141—Enhanced Qualification Program (EQP) Phase I—ATP Preparation Course

1. Applicability. This appendix prescribes the minimum curriculum requirements for Phase I—ATP Preparation of an Enhanced Qualification Program (EQP) conducted under this part. Phase I is designed to provide advanced aeronautical knowledge and simulation training necessary for preparation for the Airline Transport Pilot certificate and progression to advanced transport-category aircraft training.

2. Eligibility for Enrollment and Screening.

(a) Certificate Requirements. A person must hold the following prior to enrolling in Phase I:

(1) A commercial pilot certificate with airplane category and multiengine class rating; and

(2) An instrument rating appropriate to the airplane multiengine category and class rating.

(b) Screening and Eligibility Assessment. Prior to enrollment, each candidate/applicant must satisfactorily complete a screening process designed to assess suitability for advanced ATP-level training. The screening process must evaluate the candidate/applicant in the following areas:

(1) English Language Proficiency. The candidate/applicant must be able to read, speak, write, and understand the English language. The language proficiency assessment must evaluate the components listed in Appendix 1 to AC 60-28A, English Language Skill Standards Required by 14 CFR parts 61, 63, and 65, consistent with Operational Level 4 of the ICAO Language Proficiency Rating Scale.

(2) Cognitive Ability. The screening must assess the candidate's/applicant's ability to comprehend and respond to information provided aurally and visually, including evaluation of:

(A) Short-term memory;

(B) Performance of mental calculations; and

(C) Verbal and numerical reasoning.

(3) Ability to Learn. The screening must establish the candidate's/applicant's ability to quickly, and with minimal repetition, comprehend and apply concepts presented during training.

(4) Coordination and Spatial Ability. The screening must assess the candidate's/applicant's hand-eye coordination and spatial awareness skills sufficient to manually control an aircraft to Airline Transport Pilot standards or successor publication.

(5) Judgment and Interpersonal Skills. The screening must assess the candidate's/applicant's judgment and interpersonal communication skills, including:

(A) Integrity;

(B) Professionalism;

(C) Leadership;

(D) Resource management;

(E) Communication;

(F) Innovation; and

(G) Mentoring capability.

3. Aeronautical Knowledge Training.

(a) Minimum Hours. Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved Phase I course must include not less than 180 hours of ground training.

(b) Required Aeronautical Knowledge Areas. Ground training must include instruction in the following areas:

(1) Advanced aerodynamics, including high-speed and high-altitude effects;

(2) Transport-category aircraft performance and limitations;

(3) Advanced aircraft systems architecture and failure management;

(4) Advanced automation management and autoflight systems;

(5) High-altitude meteorology and operational weather decision-making;

(6) Air carrier flight planning, dispatch coordination, and operational control principles;

(7) Human factors, including fatigue science and threat and error management;

(8) Safety management systems and data-driven safety analysis;

(9) Regulatory requirements applicable to ATP-level and air carrier operations;

(10) Professional judgment and structured operational risk assessment; and

(11) Preparation for the Airline Transport Pilot Airplane Multiengine knowledge test.

4. Flight Training.

(a) Minimum Hours. Unless otherwise approved by the Administrator using an accepted consensus standard that provides an equivalent level of safety, each approved Phase I course must include:

(1) Not less than 10 hours of flight simulation training; and

(2) At least 6 hours of that training must be conducted in a Level C or higher full flight simulator.

(b) Authorized Training Devices. Training must be conducted in:

(1) A full flight simulator meeting § 141.41(a); or

(2) A Level 6 or Level 7 Flight Training Device meeting § 141.41(a), provided the minimum Level C or higher full flight simulator requirement specified in paragraph (a)(2) of this section is satisfied.

(c) Required Areas of Operation. Flight simulation training must include instruction and evaluation in:

(1) Upset prevention and recovery at altitude;

(2) High-altitude aerodynamics and performance;

(3) Advanced automation management and mode awareness;

(4) Stall prevention and recovery;

(5) Advanced abnormal and emergency procedures; and

(6) Scenario-based operations representative of transport-category aircraft environments.

(d) Enhanced Training. The minimum training specified in this section meets the requirements of § 61.156. Additional simulation training beyond the minimum required in paragraph (a) may be provided as part of the Enhanced Qualification Program at the discretion of the certificate holder, provided such training maintains an equivalent or greater level of safety and remains consistent with the approved training course outline.

5. Assessment and Completion Standards.

(a) Each student must satisfactorily complete:

(1) A comprehensive knowledge examination;

(2) A competency-based flight evaluation; and

(3) A scenario-based operational evaluation.

(b) Successful completion of Phase I must document that the applicant has met the knowledge and training requirements necessary to sit for the Airline Transport Pilot knowledge test.

6. Instructor Qualifications. Instructors conducting Phase I training must:

(a) Hold an Airline Transport Pilot certificate with multiengine privileges;

(b) Have documented experience in advanced multiengine or transport-category operations; and

(c) Be trained and standardized in the approved EQP curriculum.

Consensus Standard–Developed Training Courses

(Appendix S)

1. Applicability. This appendix prescribes the requirements under which a consensus standards development organization may develop and submit training course standards for acceptance by the Administrator for use under this part. Training courses developed and accepted under this appendix may be implemented by pilot schools certificated under

this part in lieu of prescriptive regulatory course requirements, provided an equivalent or greater level of safety is maintained.

2. Recognition of Consensus Standards Development Organization.

(a) A consensus standards development organization seeking to develop training course standards under this appendix must:

1. Operate under documented procedures ensuring openness, transparency, balance of interest, and due process;
2. Include representation from industry, training providers, subject matter experts, and safety professionals;
3. Maintain documented governance and revision control procedures; and
4. Demonstrate independence from any single training provider.

(b) The Administrator must accept the organization prior to accepting standards developed under this appendix.

3. Development Requirements for Consensus-Developed Courses.

A training course developed under this appendix must include:

(a) Defined learning objectives and measurable performance standards;

(b) A competency-based structure identifying:

1. Required knowledge elements;
2. Required skill elements;
3. Risk management elements; and
4. Evaluation criteria;

(c) Defined minimum training hours or competency-based equivalency standards;

(d) Defined instructor qualification and standardization criteria;

(e) Defined stage assessment and end-of-course evaluation requirements;

(f) A safety risk assessment demonstrating that the proposed course maintains an equivalent or greater level of safety compared to prescriptive requirements under this part; and

(g) A defined data collection and continuous improvement methodology.

4. Submission and Acceptance Process.

(a) A consensus standards development organization must submit to the Administrator:

1. The full course standard;
2. Supporting documentation demonstrating equivalent or greater level of safety;
3. A mapping to applicable Airman Certification Standards (ACS), where appropriate;
4. Documentation of the development process; and
5. A documented change-control process.

(b) The Administrator will evaluate whether the proposed standard:

1. Maintains an equivalent or greater level of safety;
2. Is performance-based and measurable;
3. Includes defined oversight mechanisms; and

4. Integrates with Quality Management System principles under § 141.83.

(c) Upon acceptance, the Administrator may issue a formal acceptance notice identifying the approved standard and any conditions or limitations.

5. Implementation by Pilot Schools.

(a) A pilot school may implement a course developed under an accepted consensus standard upon:

1. Incorporation into its approved training course outline; and
2. Demonstration of compliance with its Quality Management System per § 141.83(b)(2).

(b) Implementation of an accepted consensus-developed course does not require separate regulatory amendment, provided the school adheres to the accepted standard.

6. Revisions to Consensus Standards.

(a) Revisions to an accepted consensus-developed course must follow the consensus standard organization's documented revision procedures.

(b) Substantive revisions affecting safety, training hours, evaluation criteria, or required competencies must be submitted to the Administrator for acceptance prior to implementation.

(c) Minor editorial revisions may be implemented without prior approval, provided they do not affect safety or performance standards.

7. Oversight and Withdrawal.

(a) The Administrator retains authority to review accepted consensus standards at any time.

(b) Acceptance may be suspended or withdrawn if the standard no longer maintains an equivalent or greater level of safety.

8. Equivalent Level of Safety. For purposes of this appendix, an equivalent or greater level of safety means that the consensus-developed course:

(a) Achieves training outcomes equal to or exceeding those required under this part;

(b) Includes objective performance measurement;

(c) Incorporates structured evaluation; and

(d) Demonstrates continuous improvement through data-driven oversight.

Appendix A- Participating Partners

The National Flight Training Alliance (NFTA) would like to thank the following individuals and organizations in their participation in drafting this report.

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David	Krug	Acron Aviation Academy
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Kurt	Bauerle	Aims Community College
William	Faulkner	Aims Community College
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Stacey	Turner	Air Line Pilots Association- ALPA
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Paul	Ryder	Air Line Pilots Association- ALPA
Randy	Symanski	Air Line Pilots Association- ALPA
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Gregory	Maxwell	Crawford, Murphy, & Tilly
Richard	Cox	Dayton Aviation Services LLC
Dan	Avery	Douglas County Government
James	Staten	Eastern Kentucky University
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Parker	Northrup	Embry-Riddle Aeronautical University
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Michael	Crudden	FAA
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Bill	Farrar	FAA
Audrey	Gass	FAA
Jean	Hardy	FAA
Rick	Harowicz	FAA
Dr. Mia	Harper	FAA
Tim	Hayward	FAA
Louie	Hilliard	FAA

Daniel	Klingler	FAA
Maria	LeBlanc	FAA
Dwayne	Morrison	FAA
Dawn	Resek	FAA
Monico	Robles	FAA
Chona	Sandoval	FAA
Samuel	Shafer	FAA
Dan	Sindt	FAA
Joanna	Spiekermeier	FAA
Jared	Tapsfield	FAA
Cheryl	Villa	FAA
Mildred	Washington	FAA
Melanie	Weddle	FAA
Lorraine	Wright	FAA
Aspen	Perrin	FAA
Kevin	Atkins	FAA
Rya	Butterfield	FAA
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Kathryn	Boutwell	Flight Schedule Pro
Andrew	Dittrich	Flight Schedule Pro
Brittany	Humphrey	Flight Schedule Pro
Ruth	Loftis	Flight Schedule Pro
Nick	Wegner	Flight Schedule Pro
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Robert	Rockmaker	Flight School Association of North America (FSANA)
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John	Fitzgerald	Florida Aviation Academy
Carrie	Sommer	Florida Aviation Academy
Gabriel	Ribeiro Garcia	Florida Flyers
Richard	Funcheon	Florida Institute of Technology
Maeson	Busk	FLT Academy
Jason	Clark	FLT Academy
Steve	Gertsch	FLT Academy
Andrew	Hackford	FLT Academy
Tucker	Marriott	FLT Academy
Ryan	Ewing	FLYING Magazine
Ryan	Cardoza	FlySto
Brett	Hart	Four Forces

Will	Marchbanks	Four Forces
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Jordan	Tews	Fox Valley Technical College
Jeremy	Brown	Frasca
Kathryn	Creedy	Future Aviation/aerospace Workforce News
Ryan	Jeff	Gleim Aviation
Amy	McCoy	Groton Ayer Buzz
Michael	Thompson	Hampton University
Chris	Hewison	Hewison Aviation
Jon	Clausen	Highlands Aero Flight Center
Anthony	Flynn	Hillsboro Aero Academy, LLC
Dennis	Schoenberg	Hillsboro Aero Academy, LLC
Natalia	Cimpean	Hillsboro Aero Academy, LLC
Jared	Friend	Hillsboro Aero Academy, LLC
Todd	Henion	Horizon Air
Robert	Werderich	Illinois Aviation
Logan	Arlis	Illinois Aviation
Gregory	John	Infinity Flight Group
Kyle	Portela	Infinity Flight Group
David	Harris	JBER Aero Club
Jennifer	Bukacek	Jeppesen
Cody	Cleverly	Joby Aviation
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Eric	Monson	Lake Superior Helicopters
Jay	Bunning	Leading Edge Flight Academy & Helicopter Training Videos
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Brad		LeTourneau University
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Ed	Bagden	LIFT Academy
Jacob	Wilson	LIFT Academy
Christian	Rushing	Lowcountry Flight Company LLC
Richard	Miller	Lunken Flight Training Center
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Wendy	Beckman	Middle Tennessee State University- MTSU
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Sarah	Staudt	National Association of Flight Instructors- NAFI
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Laura Benson	Jones	National Flight Training Alliance (NFTA)
Jeffrey	Wolf	National Flight Training Alliance (NFTA)
Katie	Braddick	National Flight Training Alliance (NFTA)
Chuck	Miller	National Flight Training Alliance (NFTA)
Kat	Stein	National Flight Training Alliance (NFTA)
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Scott	Grandgeorge	NJASAP
Amanda	Kruse	North Star Aviation
Lindsey	Lang	North Star Aviation
Bryan	Combs	North Star Companies
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Miki	Barnes	Oregon Aviation Watch
Amanda	Briggs	Parkland College
Yogini	Modi	Pilot Training Center Homestead
Lucero	Duran Trinidad	Purdue University
Patricia	Keen	Purdue University - Retired
Erik	Strickland	Regional Airline Association- RAA
Daniel	Keen	Retired FAA Aviation Safety Inspector
Keith	West	Rex Air
Brian	Parke	Rising Wings Aviation Inc
Robbie	Sturdivant	Riverside Flight Center
Jack	Schwarz	Saint Louis University
Maggie	F	Sallie Mae
Edgar	Mora	San Jose State University
Mike	Awad	Savannah Aviation
Luke	Ormsby	Sierra Charlie Aviation
Joe	Sciolla	Sierra Charlie Aviation
Mark	Donovan	Sky Bright
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Katharine	Braun	Southwestern Illinois College
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Eric	Savage	SUNY Schenectady
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Andrea	Watts	Texas Veterans Commission
Brittany	Dinsmore	Texas Woman's University
Adam	Magee	The Balloon Training Academy
Kelly	Freeland	The Flying School
Brian	Strzempkowski	The Ohio State University
Stuart	Stevenson	Thrust Flight
Seth	Howell	Trade Winds Aviation
Katheryn	Wilson	Transportation Trades Department, AFL-CIO
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John	Lewis	Universal Flight Concepts
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Christopher	Ramey	US Aviation Academy
Scott	Sykes	US Aviation Academy
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Ryan	Leick	Utah Valley University
Dan	Sutliff	Utah Valley University
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Rosendo	Garcia jr	
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Edward	Brink	
Matthew	Bunnell	

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Mitch	Hall	
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Kent	Lewis	
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Kelly	Moore	
Jake	Murzy	
Scott	Nutter	
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Jacob	Veness	
Dawn	Vinson	
Wes	Waddle	