ACT ARC Recommendation 24-1
Pilot Training Pathway Enhancements

I. Submission

The recommendations below were submitted by the Pipeline, Pathways, & Partnerships Workgroup (P3 WG) for consideration by the Air Carrier Training Aviation Rulemaking Committee (ACT ARC) Steering Committee at F2F–31 on May 15, 2024. The ACT ARC Steering Committee adopted the recommendations, and they are submitted to the Federal Aviation Administration as ACT ARC Recommendation 24–1.

II. Executive Summary

The P3 WG was tasked with answering the question, "[I]s there room for creating an additional regulatory path for individuals seeking a professional piloting career?"[1] The Workgroup considered current and past initiatives pursued by the ACT ARC and the industry at large and discussed and explored various opportunities for additional pathways toward a professional piloting career.

In response to the question posed to it, the P3 WG acknowledged it is within the FAA's authority to promulgate one or more additional regulatory paths. The Workgroup also concluded, however, that to be worthwhile, any such additional pathways must necessarily enhance the pilot training experience, result in a pilot with a higher degree of advanced aviation knowledge and skill, and not negatively impact the sustainability of the existing pathways.

The Workgroup was not tasked with developing a detailed plan for such a pathway or pathways. It instead identified a high-level concept that could potentially form the basis for an additional regulatory pathway to a professional piloting career. In doing so, the P3 WG considered the basic necessary elements, as well as potential obstacles, limitations, and unintended consequences.

The concept the ACT ARC proposes is an additional Professional Flight Training Organization (PFTO) certification for pilot schools satisfying standards above and beyond those currently required for certification under Title 14 Code of Federal Regulations (14 CFR) part 141 (Part 141), incorporating elements intended to prepare pilots for a career in commercial aviation. These additional standards and elements would include:

- Minimum fleet and ground training device requirements;
- A quality management system;
- Minimum flight training and ground training curriculum requirements in excess of the existing requirements under 14 CFR part 141, including:
    - Upset prevention and recovery training (UPRT) conducted in an all attitude aircraft;

[1] The term "regulatory path" does not have a commonly accepted definition. For purposes of this Recommendation, the P3 WG considered regulatory path or pathway to mean the full scope of pilot certification and flight experience steps that takes an individual from nothing to the level required for entry into Qualification training at an air carrier. Furthermore, it is what prepares them with the foundational knowledge and skills which are important for their success, not just during Qualification but throughout the remainder of their career as a professional pilot in transport category aircraft.

    - A jet transition course administered to a performance standard utilizing a full flight simulator; and
    - Aviation academic training equivalent to a minimum of 30 semester credit hours of coursework in an accredited aviation degree program;
- An air carrier-oriented training environment, including elements and characteristics encountered in air carrier flight training and line operations, such as flows and memory items, Minimum Equipment Lists, and Line Oriented Flight Training;
- Industry Advisory Boards;
- Entry screening standards or candidate assessment protocols;
- Instructional System Design;
- Establishment of a safety management system meeting the standards of 14 CFR part 5;
- Standardized instructor/evaluator training
- Demonstrated performance as a flight training provider;
- Data collection and use standards.

In conjunction with this recommendation, the ACT ARC also proposes that the FAA pursue academic accreditation of Part 141 Pilot Schools, particularly PFTOs. Accreditation would demonstrate a willingness to establish and maintain training programs exceeding the minimum required standards providing students confidence in their likely successful completion of training.

In addition to this concept, the ACT ARC developed several recommendations not directly within the scope of its tasking, but relevant to ensuring a sustainable supply of appropriately trained and qualified pilots for the air carrier industry and commercial aviation generally. These recommendations include:

- Enhancement of initial and recurrent training for FAA Aviation Safety Inspectors (ASI) assigned to Pilot Schools/PFTOs, review and revision of inspector guidance, and an increase in the number of ASIs available for certificate holder oversight to ensure standardization and quality of oversight;
- Encouragement of industry/FAA collaboration and information sharing relating to pilot training;
- Continued actions to ensure the availability of adequate numbers of Designated Pilot Examiners to satisfy practical examination needs; and
- Exploration of validation and use of current and emerging technologies.

III. Statement of the Issue

In the first element of its tasking, the P3 WG was asked to report on the current initiatives and actions in developing, diversifying, and expanding the pilot workforce, including examining pathways and partnerships that support the expansion of the pilot workforce. To fulfill this tasking, the P3 WG explored the factors, challenges, and decisions faced by individuals considering or pursuing a professional piloting career; training providers, including colleges and universities offering aviation degree programs; and air carriers and other commercial operators seeking appropriately experienced and qualified pilots.

In its Industry Landscape Report[2] submitted in response to the first element of its tasking, the P3 WG identified a number of key findings:

- For individuals with the requisite aptitude and interest to pursue a career as a professional pilot, the greatest obstacles to achieving that goal may be the cost of flight training, the lack of easy access to financing, and the inability to make repayment on financing immediately after completing training.
- The inconsistent availability of Designated Pilot Examiners (DPE) has a significant impact on students' ability to timely complete oral and practical examinations for certificates and ratings.
- Training pathways to becoming a career professional pilot are increasing in both number and variety.
- Due to multiple barriers of entry, some demographic groups, particularly women and persons of color, are disproportionately represented in the ranks of professional pilots.
- Despite the wide variety of training providers available to aspiring pilots, they lack ready access to reliable information needed to make meaningful comparisons between options. Secondary to this issue is a lack of financial literacy or awareness of available financing options, including the lack of appreciation of the impacts of borrowing large sums of money at unfavorable terms.
- There is no regulatory difference between flight academies offering robust, career-oriented training programs and flight schools with more general programs.

In the second element of its tasking, the P3 WG was asked to determine whether there is room for creating an additional regulatory path for individuals seeking a professional piloting career. The P3 WG acknowledged it is within the FAA's authority to promulgate one or more additional regulatory paths. The P3 WG believes, however, that to be worthwhile, any new pathway must enhance the pilot training experience, result in a pilot with a higher degree of advanced aviation knowledge and skill that better meets the expectations of airlines/operators, and not negatively impact the sustainability of the existing pathways.

In the course of its discussions, the P3 WG also reached additional findings not expressly articulated in its Landscape Report:

- There is a lack of standardization among the training offered by various providers.
- The framework for flight training and certification under 14 CFR parts 61 and 141 and related guidance does not adequately cover advanced skills and competencies important to preparing pilots for transport category aircraft operations.
- There are no consistent screening processes or standards for candidates entering the professional aviation realm.
    - While students seeking entry to aviation degree programs at colleges and universities must satisfy the applicable admission standards, these standards may not assess aptitude relevant to a flying career.

[2] The P3 WG's Industry Landscape Report is attached to this Recommendation as Appendix C.

  - Similarly, to the extent non-university flight schools have admission or other screening criteria, they are not standardized, and may not be relevant to the likelihood of success as a professional pilot.
- There is a lack of data collection, comparison, and collaboration within the flight training industry to expand on best practices.
- FAA oversight of flight training providers varies, with policy differences between field offices. ASI training, inadequacies of associated guidance material, and lack of FAA Headquarters oversight of ASIs and field offices may be significant factors affecting the application of consistent oversight.

IV. Proposed Recommendations

The ACT ARC recommends the FAA consider exploration of the following concepts and efforts:

24-1(a) Establish a Professional Flight Training Organization (PFTO) designation as an additional certification for Pilot Schools certificated under 14 CFR part 141 (Part 141), meeting the standards identified in Appendix A to this Recommendation.

24-1(b) Require all PFTOs and part 141 Pilot Schools to seek, earn, and maintain accreditation by a nationally accepted independent accrediting body that demonstrates their willingness to establish, demonstrate and maintain a level of flight training standard above and beyond the FAA minimum required standard; to ensure that learners, their financial sponsors and financial lending institutions are confident in the product they are purchasing and the likely success in the learner finishing the training to intended completion of an ATP or R–ATP.

24-1(c) Enhance initial and recurrent training for ASIs assigned to Pilot Schools/PFTOs, review and revise inspector guidance to ensure standardization and quality of oversight, and increase the number of ASIs available to oversee certificate holders.

24-1(d) Encourage industry/FAA collaboration and information sharing relating to pilot training, including the following:

1. Take steps to establish, promote, and support an ongoing FAA sanctioned industry “roundtable” or similar forum, convened at regular intervals, to improve crosstalk, use of best practices, and continuous dialogue in an effort to continuously improve the development, delivery, and analysis of academic and flight training, and to support awareness and understanding of such training methods by FAA inspectors. The ACT ARC also recommends the FAA advocate for, support, and promote existing industry training forums that enable regular interaction between FAA and industry to likewise foster awareness and understanding of new developments in training, technology, and the need to update FAA documents to reflect these changes.
2. Take steps to promote and support participation in the forums described in Recommendation 24-1(d)1, above, by FAA inspectors and other personnel whose roles and responsibilities include substantive interaction with the training community, and to encourage application of the knowledge gained from such participation when evaluating certificate holders’ training programs.

3. Take steps to promote and support direct contact between commercial aviation and the broader training industry, including military aviation training, and avail itself of the tremendous resources these organizations offer. These external training organizations fund research, white papers, and studies on topics in the broader learning industry that are critical to the success of commercial aviation training.
4. Encourage the creation of an online repository of information related to aviation training.

24-1(e) Continue to take action to ensure the availability of adequate numbers of Designated Pilot Examiners (DPE) and Aviation Safety Inspectors (ASI) to satisfy anticipated practical examination needs.

24-1(f) Explore ways to validate and allow use of current and emerging technologies.

V. Rationale and Discussion

The ACT ARC believes implementation of the recommendations above will have numerous positive effects, including improve the suitability of new pilots trained to fly transport category aircraft.

- Better FAA oversight, support, and geographic prioritization of DPEs would reduce delays and bottlenecks in student training.
- Enhanced training requirements would better prepare pilots for employment in the professional aviation domain.
- Enhanced requirements for training providers will aid in standardizing the training experience of those seeking a professional pilot career and result in improved safety and better prepared pilots for air carriers and other operators.
- Implementation of screening or candidate assessment protocols may result in improved quality of candidates beginning professional pilot training by factoring in such elements as already existent aptitude and knowledge.
- Both enhanced requirements for training providers and candidate screening/assessment protocols for entry into training should provide assurance to lenders that standards and practices are in place and increase confidence in the success of prospective professional pilots. This may allow access to better interest rates for loans to conduct training and more favorable repayment programs.
- Inclusion of role models and mentorship by active professional pilots, particularly and pilot professional development in requirements for training providers would enhance efforts to improve diversity in the industry and improve safety of operations. It could also enhance decision-making competencies.
- Improved standards of training, along with independent accreditation should enhance a broader cross-section of the general population’s access to funding from lending institutions and at more favorable rates.

Recommendation 24-1(a):
Establish a Professional Flight Training Organization (PFTO) designation as an additional certification for Pilot Schools certificated under 14 CFR part 141, meeting the standards identified in Appendix A to this Recommendation.

Rationale
In assessing the current training environment for individuals considering or pursuing a career as a professional pilot, the ACT ARC identified a number of disparate aspects of the training currently available.

There is a broad lack of standardization among training stakeholders. While pilot schools' courses may be certified under Title 14 Code of Federal Regulations (14 CFR) part 141, and aviation universities may be granted institutional authority to certify pilot as eligible for issuance of an R–ATP certificate under 14 CFR § 61.160, there is a wide range of variation between training providers holding the same certificates or approvals. Flight training curricula and ground training/classroom course curricula at many aviation universities and flight schools lack content important to preparing pilots for transport category aircraft operations.

Additionally, the framework for flight training and certification under 14 CFR parts 61 and 141 and related guidance does not place emphasis on skills and competencies most important to preparing pilots for transport category aircraft operations. The list of academic areas set forth in Advisory Circular 61–139, which a college or university must include in its curriculum to qualify for institutional authority, expands upon the part 61 and 141 requirements, but is not comprehensive and lacks specificity. These shortfalls are only partly addressed by the ATP–CTP requirements of 14 CFR § 61.156.

The central component of the PFTO concept is an enhanced training program that expands upon the existing part 61 and part 141 training requirements, to include additional topics and skills relevant to professional pilot flight operations in a structured training program designed for individuals embarking on an aviation career path. The ACT ARC recommends 14 CFR part 141 (Part 141) be revised to accommodate PFTO certification. Part 141 offers a higher level of standardization and oversight than part 61. Part 141 pilot school certification would be a prerequisite to PFTO certification, and training administered under a PFTO certificate would be in accordance with courses approved under part 141 or higher standard. For example, a PFTO might choose to partner or contract with a 14 CFR part 142 training center or a part 121 air carrier to accomplish certain portions of training (such as jet transition training) in flight simulation training devices (particularly full flight simulators (FFS).

The ACT ARC recommends that accreditation and certification of a Pilot School as a PFTO require a demonstration that it meets the standards and requirements described here.

In addition to Part 141 certification and accreditation, the ACT ARC recommends the following be requirements for PFTO certification:

Demonstrated Performance
The ACT ARC recommends training organizations be required to conduct training for a minimum period while demonstrating acceptable performance. Because PFTO certification represents a higher standard than that to which existing flight training

organizations are held, to become a PFTO, the ACT ARC recommends a flight training organization conduct flight training for a minimum of 2 years and meet the requirements of 14 CFR § 141.5, in addition to the other PFTO-specific requirements.

Quality Management System
The ACT ARC recommends PFTOs be required to maintain a Quality Management System (QMS) to ensure management qualifications, instructor standardization, and continuous improvement. The QMS should document internal processes, procedures, and responsibilities. The QMS should include processes and practices to standardize and maintain quality of instruction, and document the PFTO's instructional design process.

Fleet/Device Requirements
Because the purpose of a PFTO is to prepare pilots for professional flight operations, aircraft used by a PFTO should meet certain minimum standards to aid in that preparation. The ACT ARC recommends PFTOs be required to maintain a fleet of both single and multi-engine aircraft, and that all flight training conducted by a PFTO beyond the Private Pilot Certificate level be conducted in technically advanced airplanes (TAA).

The ACT ARC recommends simulation devices used for training include flight training devices (FTD) and full flight simulators (FFS) appropriate for training and checking tasks, as identified in Tables A1B and B1B in 14 CFR part 60,[3] as well as other devices, such as integrated procedures trainers (IPT), advanced aviation training devices (AATD), and augmented/virtual/mixed reality (AR/VR/MR) devices.

Airline Oriented Training Environment
Because the majority of PFTO students will have the end goal of flying in operations involving transport category aircraft, the training environment and characteristics should, to the extent possible, incorporate elements of air carrier or commercial flight operations, culture, standards, concepts, and methodologies that would be encountered in professional pilot flight training and line operations, such as:

- Use of Flows/Memory Items and Checklists;
- Standard Operating Procedures (SOP)/Flight Operations Manual (FOM)/Flight Crew Operating Manual (FCOM);
- Operational Control;
- Minimum Equipment Lists (MEL)/Configuration Deviation Lists (CDL); and
- Ground Operations.
- Mentoring/professional development

The ACT ARC also recommends that PFTO programs include Line Oriented Flight Training (LOFT)-type training simulating line air carrier operations. This training should include multi-crew communications that line flightcrews would encounter, including air traffic control and international airspace communications, ground control, dispatch, scheduling, management, flight attendants, other air carrier personnel (gate agents, ground crew, etc.), and passengers.

[3] The ACT ARC anticipates PFTOs may opt to partner with or contract with air carriers or 14 CFR part 142 Training Centers to gain access to FTDs and FFSs.

Industry Advisory Board (IAB)
The ACT ARC recommends each PFTO establish an IAB to leverage experience from a representative population of stakeholders to impart knowledge, SOPs, and best practices down to the flight training organization level and provide feedback and collaboration opportunities that would allow the PFTO to more effectively implement technologies and techniques and coordinate activities as an integral part of the process of continuous improvement.

Screening and Selection Standards
There should be screening processes and standards for candidates entering the career path of a professional pilot. While students seeking entry to aviation degree programs at colleges and universities must satisfy the applicable admission standards, these standards do not assess aptitude relevant to a flying career. Similarly, to the extent non-university flight schools have admission or other screening criteria, they are not standardized, and, like university admission criteria, may not be relevant to success as a professional pilot. A well-designed standardized screening/admission process may help identify candidates with the potential to successfully complete the program. This could improve the efficiency of the program by ensuring a greater proportion of program resources are devoted to successful enrollees.
A standard screening/admission standard may also help funding institutions to determine applicant credit rating based on the likelihood of an applicant successfully completely the training requirements to be employed in aviation as a professional pilot and therefore more likely to be able to pay loans back.

The ACT ARC recommends that, as a prerequisite to admission to a PFTO flight training program, candidates should undergo a screening and selection process to ensure they have the potential to successfully complete the program to improve the efficiency of the program.

The screening process should consider the following attributes:

- *Medical assessment*. Each candidate should obtain a First Class Medical Certificate prior to beginning training.
- *English language proficiency*. The candidate/applicant must be able to read, speak, write, and understand the English language. The language proficiency test should be sufficient to assess each of the components listed in Appendix 1 to AC 60-28A, English Language Skill Standards Required by 14 CFR Parts 61, 63, and 65, which are based on the Operational Level 4 of the International Civil Aviation Organization Language Proficiency Rating Scale.
- *Cognitive ability*. The test should assess the candidate's/applicant's ability to comprehend and respond to information provided aurally and visually. The test should include content intended to assess the candidate's/applicant's short term memory, performance of mental calculations, and verbal and numerical reasoning.
- *Ability to learn*. The test should establish the candidate's/applicant's ability to quickly, and with minimal repetition, comprehend and apply concepts presented in training.
- *Coordination/spatial ability.* The test should assess the candidate's/applicant's hand-eye coordination and spatial awareness skills.

- *Judgment and interpersonal communication skills*. The test should assess the candidate's/applicant's judgment and interpersonal communication and relationship skills, including integrity, professionalism, leadership, resource management, communication, and mentoring.

Instructional System Design (ISD)
The ACT ARC recommends PFTOs be required to use an ISD process such as ADDIE to develop the academic training portions of their curricula. This ISD process should take into account input from affected stakeholders.

Part 5 Compliant Safety Management System (SMS)
All PFTOs and Part 141 schools should have an SMS satisfying the requirements of 14 CFR part 5. At minimum, the SMS should include: a voluntary reporting program, such as an Aviation Safety Action Program (ASAP) or the Aviation Safety Reporting System (ASRS); fleet flight data management or a Flight Operational Quality Assurance (FOQA) program; a risk management/mitigation program; safety culture, incorporating a safety climate, just culture, and self-assessment protocols; and external auditing. Ideally a combination of Safety I and Safety II ideologies would be used. Safety I focuses on what goes wrong, data surrounding accidents and incidents with an emphasis on the errors that must be prevented. Safety II focuses on what goes right in an operation and highlights points of resiliency.

Instructor/Evaluator Training
The ACT ARC recommends PFTOs be required to maintain a formal instructor/evaluator training program to help ensure consistent instructor rating of pilots' reliability that includes application of fundamentals of instruction, as well as a quality assurance program for flight instructor quality, a robust instructor/evaluator standardization and calibration program, and Advanced Qualification Program (AQP)-like recurrent instructor training.

The ACT ARC recommends that instructors/evaluators conducting Jet transition and LOFT training, testing and checking under a PFTO curriculum have at least 2 years of experience as a pilot in command (PIC) in operations under § 91.1053(a)(2)(i) or § 135.243(a)(1), or as a PIC or second in command (SIC) under part 121.[4] PFTO instructors/evaluators administering jet transition and LOFT must also be qualified in accordance with § 121.410(b)(1) and (3), and PFTO flight instructors administering such training must be qualified in accordance with § 121.410(b)(4).[5] Additionally, the P3 workgroup recommends that PFTO instructors/evaluators be trained and qualified in facilitation, threat and error management (TEM), risk mitigation, and reliable data collection, as well as receiving inter-rater reliability (IRR)/calibration training. The P3 workgroup further recommends that PFTO instructors/evaluators complete initial and

[4] 14 CFR § 91.1053(a)(2)(i) prescribes the pilot in command (PIC) requirements for operations under part 91, Subpart K (Fractional Ownership Programs). 14 CFR § 135.243(a)(1) prescribes the PIC requirements for passenger carrying operations under part 135.
[5] 14 CFR § 121.410(b)(1) requires a instructor to hold an ATP certificate. 14 CFR § 121.410(b)(3) requires an instructor to hold a CFI or receive specific training on instruction and evaluation. 14 CFR § 121.410(b)(4) requires an instructor to receive specific training on use of FSTDs to administer training.

annual recurrent training to maintain the qualification to instruct/evaluate under an PFTO curriculum.

Certificates Offered
The ACT ARC recommends that to qualify as a PFTO, a pilot school be required to offer, at minimum, the following certificates and ratings: Private Pilot Certificate (PPC), Commercial Pilot Certificate (CPC), Instrument rating, single and multi-engine ratings, Certified Flight Instructor (CFI), CFI-Instrument (CFII), and Multi-engine Instructor (MEI). The ACT ARC further recommends PFTO programs include, at minimum, completion of the PPC, CPC, Instrument rating, single and multi-engine ratings, CFI, and CFII. Obtaining an MEI would be optional, but highly encouraged.

Training Topics
Because PFTOs are preparing pilots for training and line operations in transport category aircraft, Academic and Flight Training curricula should include elements not currently required for pilot schools and other training providers, including, but not limited to the following:

- *Upset Prevention and Recovery Training (UPRT)*. UPRT should include all attitude training in both aircraft and ground training devices, as well as academic training.
- *Human Factors.* Human factors training should cover crew resource management (CRM); threat and error management (TEM); aeronautical decision making (ADM); knowledge, skills, and attitudes (KSA) assessment. Training should also include aviation physiology and medical certification topics, such as aeromedical standards and FAA medical certification, fatigue/alertness and duty limits, hypoxia, spatial disorientation, pilot assistance programs (Pilot Mental Health, Human Intervention Motivational Study (HIMS), and Pilot Peer Support), and fitness for duty, including the IMSAFE (Illness, Medication, Stress, Alcohol, Fatigue, Emotion) checklist.
- *Pilot Professional Development.* PFTO training should include pilot professional development training, such as mentorship training (including specific training for flight instructors and students on the value of receptivity to mentorship), communications skills, interpersonal skills, social skills, maturity, command and leadership skills, CRM/Soft Skills, and ethics.
- *Academic best practices.* The ACT ARC recommends establishment of academic best practices, such as a student code of conduct and ethics, be required elements for PFTO certification.
- *Jet Transition Course.* The ACT ARC recommends students completing a PFTO program be required to complete a jet transition course incorporating academic and flight training to a performance standard (as compared to an ATP CTP course that has no such performance standards). PFTOs could provide a jet transition course in partnership with an air carrier or training center, with FAA approval. Elements of a jet transition course should include:
    - Turbine/turbojet Engines
    - Transport Category Aircraft Performance
    - Advanced aircraft systems
    - Advanced swept wing, high altitude Aerodynamics Principles (ground instruction)

- High Altitude/High Performance Operations (academic and in-aircraft training)
- Maneuvers (practical to air carrier operations)
- Departure-based scenarios based on density/airport altitude, aircraft max weight and max/min temperature ranges.
- Energy Management
- Low Energy States/Stalls
- Upset Recovery
- Exposure to and training in a High-Altitude Trainer
- Challenge/Response Scenarios
- Go/No Go Decision (Wx, maintenance, etc.)
- Runway incursion/Runway Awareness Advisory System (RAAS)
- Engineered Material Arresting Systems (EMAS)
- Runway Status Lights (RWSL)
- Meteorology/Adverse Weather
- Low Level Wind Shear (LLWS)
- Windshear Detection & Escape Maneuvers
- Cold Wx Operations
    - Icing/De-icing/Anti-ice
- Traffic Collision Avoidance System (TCAS)/Airborne Collision Avoidance System (ACAS)
- Enhanced Ground Proximity Warning System (EGPWS)
- Weather Radar
- Electronic Flight Bag
- Automation management
    - Flightpath Management
    - Flight Mode Annunciator (FMA)
    - Flight Management System (FMS)
    - Controller-Pilot Data Link Communications (CPDLC)
    - Satellite Communications (SatComm)
    - Datalink
    - High Frequency (HF) Radio Communications
    - Autopilot
    - Flight Director
    - Mode Control Panel
    - Autoland/Cat II/III
    - Area Navigation (RNAV)/Vertical Navigation (VNAV)
    - Heads Up Display (HUD)/Enhanced Flight Visualization Systems (EFVS)
    - Global Positioning System (GPS) interference
- High density airport/airspace ops (in aircraft or a realistic simulated environment)

- *Safety Systems Academics.* A PFTO program should include academic training on safety assurance and safety management system theory and components.

Course Sequencing

The ACT ARC recommends PFTOs be required to appropriately sequence flight and academic training, including designation of pre- and co-requisites, to optimize synthesis

of learning. Conducting all or a majority of academic training prior to commencement of flight training would not satisfy this requirement. Academic training should be within reasonable temporal proximity to associated flight training to help ensure maximum comprehension and, ultimately, safety.

The ACT ARC envisions that portions of training, such as the jet transition course, could be deferred, and take place after the student has accrued aeronautical experience approaching the level needed for an ATP or R/ATP. This would be analogous to pilots' completing the ATP CTP course shortly before undergoing the ATP knowledge test under the existing training structure.

Minimum Ground Training
The ACT ARC recommends the minimum ground training classroom hours for a PTFO program be equivalent to the classroom hours needed to provide 30 semester credit hours in a collegiate educational environment. This degree of ground training will allow for complete treatment of subject matter, including repetition and comprehensive discussion, leading to understanding and retention of content. Assuming a typical collegiate semester length of 16 weeks, 30 semester hours equates to a minimum total of 480 hours of classroom training.

Minimum Flight Training
The ACT ARC recommends the minimum flight training and experience requirements for PFTO certificate and rating courses be prescribed in the regulations and meet or exceed the existing requirements specified under Part 141. Upon adoption of this Recommendation, the FAA would also need to set requirements for course elements not currently specified under Part 141, such as UPRT and the jet transition course.

The P3 WG discussed whether greater training efficiencies could be achieved by recommending PFTOs train pilots to a purely competency-based standard, with either no fixed minimum training and experience requirements or reduced requirements. Due to the foundational nature of training at the PPC, CPC, Instrument Rating, and MEL level, the ACT ARC believes it will be necessary to set minimum flight training and experience requirements to provide students the opportunity to demonstrate proficiency to the ACS standards on a consistent and repeatable basis.

Instructional Environment/Methods
The instructional environment and methods used should effectively facilitate a learning environment conducive to understanding of curriculum content. The ACT ARC recommends that PFTOs be required to provide academic training using in-person, instructor-led, synchronous learning, appropriately balanced with other instruction modalities. Advantages and disadvantages can be identified for different instruction modalities. A balanced approach of instructor-led training and self-guided study may offer the greatest benefit.

Data Collection and Use
The ACT ARC recommends PFTO certification requirements include requirements for retention of training data and collection of training data from air carrier partners to support instructional design and continuous improvement. The FAA should also encourage sharing of data between training providers, modeled after the Aviation Safety

Information Analysis and Sharing (ASIAS) program. All data shared should be deidentified and aggregated.

Transferability
The ACT ARC recommends that students be able to transfer credit for completed academic and flight training courses or modules between accredited PFTOs. (See also discussion of Transferability of Credit/Learning Hours under Recommendation 24-1(b).)

The ACT ARC envisions that an approved PFTO program would incorporate all elements of the ATP Certification Training Program (ATP CTP) specified in 14 CFR § 61.156, and that successful completion of a PFTO would satisfy the requirements of that section.

The PFTO concept outlined exceeds the existing Part 61 certification requirements and Part 141 Pilot School requirements, and includes significant content specifically geared toward preparing pilots for commercial operations in transport category aircraft. The ACT ARC believes the training provided by a PFTO could be of greater value than existing Part 61 and 141 training.

Non-collegiate pilot training programs are not eligible for institutional authority to qualify students to see an R–ATP certificate. Pending action by the FAA and specification of detailed PFTO requirements, it is premature to speculate whether such a program could warrant an expansion of existing R–ATP pathways. If the FAA determines an accredited PFTO program would compare favorably with collegiate aviation degree programs eligible for R–ATP qualification, the FAA could consider expanding such qualification to include accredited non-collegiate PFTOs.

Barriers and Constraints
The ACT ARC identified several potential barriers to or constraints on the FAA's ability to implement Recommendation 24-1(a). Internal barriers and constraints include those related to rulemaking, such as the time required, and the need to prioritize limited resources and capacities, and the need for additional resources to certify and oversee PFTOs.

External barriers and constraints include uncertainties, such as whether flight schools will conclude that the benefits of PFTO certification justify the startup costs and increased operating expenses, and whether students will perceive sufficient value in PFTO training programs. (See Recommendation 24-1(b) for additional relevant information.)

Recommendation 24-1(b):
Require all PFTOs and Part 141 schools to seek, earn, and maintain accreditation by a nationally accepted independent collegiate accrediting body that demonstrates their willingness to establish, demonstrate and maintain a level of flight training standard above and beyond the FAA minimum required standard; to ensure that learners, their financial sponsors and financial lending institutions are confident in the product they are purchasing and the likely success in the learner finishing the training to intended completion of an ATP or R–ATP.

Rationale
Accreditation by a nationally recognized collegiate accrediting body should be required to demonstrate that training providers and their curricula meet the highest standards.

It is the mandate of the FAA to ensure that part 141 schools meet the minimum pilot training, testing, and checking standards, and the FAA must always retain full and comprehensive oversight of those standards. Organizations seeking additional accreditation indicate a desire to achieve a higher standard of professional training significantly above the FAA minimum for certification.

The benefits of accreditation from a nationally accepted collegiate accrediting organization and its positive impact on institutions, professionals, and stakeholders could include 1) Quality Assurance, 2) Enhanced Reputation and Credibility, 3) Transferability of Credits and Degrees, 4) Continuous Improvement and Professional Development, and 5) Financial Aid Eligibility.

What is accreditation?
Accreditation is a voluntary process/system to acquire additional benefits by recognizing educational institutions, healthcare facilities, and other organizations (and/or their professional programs) that achieve and maintain a high level of performance, integrity, and quality. They undergo an evaluation by an external accrediting body, to ensure they meet increased established standards of quality and excellence. It also indicates that the organization or institution has undergone a thorough evaluation and has been found to meet specific criteria set by an accrediting body.

Accreditation is founded on the principle that a comprehensive self-assessment followed by candid feedback from professional peers is essential to ongoing and continuous improvement and achieving educational success.

Accreditation is commonly used in various fields, such as education, aviation, healthcare, and business, to ensure that companies and organizations meet established standards and provide high-quality services or products. It provides assurance to stakeholders, such as students, lenders, patients, and customers, that the accredited organization or institution meets recognized standards of excellence.

The FAA always retains the very specific responsibility for approving pilot training programs based on the FAA regulations and guidance standards. An accrediting body, in turn, would add a higher level of credibility for that same program utilizing established guidance to ensure standardization and quality between training providers.

Consistency and Quality: “Quality Assurance”:
Accreditation serves as a quality assurance mechanism that ensures the courses and programs offered by an institution meet specific standards of rigor and academic excellence. When an institution is accredited, it will then continue a comprehensive evaluation through a routine recertification audit process performed by an accrediting body to meet specific criteria and standards.

FAA Part 61/91/107/135/141/142 & Standardized Curriculum
The benefits of accredited, standardized curriculum across all accredited and FAA certificated Professional Flight Training Organizations (Part 141 schools) include Consistency and Equity: Standardized curriculum ensures consistency in educational content and learning outcomes across different schools and regions. It provides all students with equal access to quality education, regardless of their location or socioeconomic background. Standardization promotes educational equity by ensuring that all students have access to the same knowledge and skills, reducing disparities in educational opportunities. This provides a level playing field, and a comfortable level of quality assurance. Learners, benefactors, and financial lending institutions can view this as a validation of the flight training product for which their dollars will be spent.

Accredited PFTOs and Part 141 schools: (Transferrable credits to another Accredited Institution)
The WG envisions that attending an accredited PFTO/Part 141 school, a student may be able to work toward a low-cost associate degree, taking pre-requisites for a bachelor's degree while having a more flexible schedule.

Accreditation ensures that the PFTO/141 school meets certain standards of quality and excellence in their educational programs and services. It provides a mechanism for evaluating and monitoring the effectiveness and ensuring that they are delivering the intended learning outcomes and meeting the needs of students.

It is also our intent that when a student begins training at a PFTO or Part 141 school, that has applied for accreditation, and subsequently receives accreditation, this student who is enrolled at that time would be considered a graduate of an accredited program for the purposes of that pathway.

Transferability of credit/learning modules
Accreditation is crucial in the transfer of credits as it ensures that the credits earned at one institution are recognized and accepted by another institution. When a student transfers from one college, university or PFTO to another, the receiving institution needs to evaluate the courses and credits earned at the previous institution to determine how they can be applied towards the student's completion of the program.

If an institution is not accredited or if the credits earned are from a non-accredited institution, the receiving institution may have concerns about the quality and rigor of the courses. They may require additional evaluation or assessment of the credits before accepting them for transfer. This can lead to delays in the transfer process and potentially result in the potential loss of credits, or the need to retake courses and increasing overall costs to complete the program.

As an example, when a student transfers credits from an accredited institution to another accredited institution, there is a higher level of confidence that the courses taken at the previous institution are equivalent in content and academic rigor to the courses offered at the receiving institution. This makes the transfer process smoother and more efficient, as the receiving institution can have confidence in the quality of the credits being transferred. Moreover, this makes it easier for students to transfer credits earned at a 2-year college to a four-year college, university, Part 141 school or PFTO, ensuring that their hard work and academic achievements are recognized and accepted by other institutions.

Barriers and Constraints
Potential obstacles to implementation of Recommendation 24-1(b) include the same rulemaking-related constraints applicable to Recommendation 24-1(a). In addition, the need for a non-governmental entity to accredit PFTOs introduces a novel concept. However, it is believed that existing collegiate accreditation organization/processes (*e.g.*, the Aviation Accreditation Board International (AABI)) contains the bandwidth and expertise to implement an expansion of accreditation of PFTOs/Part 141 schools.

Recommendation 24-1(c):
Enhance initial and recurrent training for ASIs assigned to Pilot Schools/PFTOs, review and revise inspector guidance to ensure standardization and quality of oversight, and increase the number of ASIs available to oversee certificate holders.

Rationale
As noted above, FAA oversight of flight training providers varies, with policy differences between field offices. ASI training and inadequacies of associated guidance material may be significant factors affecting the application of consistent oversight. Additionally, certificate holders report frequent delays of FAA responses to requests for routine modifications to authorizations.

Enhanced training and updated guidance would address concerns regarding inconsistent treatment by ASIs at different Flight Standards District Offices (FSDO), and would allow prospective students to draw more meaningful quality comparisons between different training providers.

Similarly, recruiting, training, and deploying more ASIs would aid in increasing the quality of oversight.

Barriers and Constraints
The FAA’s ability to enhance ASI training, update inspector guidance, and increase the number ASIs is subject to prioritization among various efforts and initiatives competing for limited agency resources.

Recommendation 24-1(d):
Encourage industry/FAA collaboration and information sharing relating to pilot training, including the following:

1. Take steps to establish, promote, and support an ongoing FAA sanctioned industry “roundtable” or similar forum, convened at regular intervals, to improve crosstalk, use of best practices, and continuous dialogue in an effort to continuously improve the development, delivery, and analysis of academic and flight training, and to support awareness and understanding of such training methods by FAA inspectors. The ACT ARC also recommends the FAA advocate for, support, and promote existing industry training forums that enable regular interaction between FAA and industry to likewise foster awareness and understanding of new developments in training, technology, and the need to update FAA documents to reflect these changes.
2. Take steps to promote and support participation in the forums described in Recommendation 24-1(d)1, above, by FAA inspectors and other personnel whose roles and responsibilities include substantive interaction with the training community, and to encourage application of the knowledge gained from such participation when evaluating certificate holders’ training programs.
3. Take steps to promote and support direct contact between commercial aviation and the broader training industry, including military aviation training, and avail itself of the tremendous resources these organizations offer. These external training organizations fund research, white papers, and studies on topics in the broader learning industry that are critical to the success of commercial aviation training.
4. Encourage the creation of an online repository of information/data related to aviation training.

Rationale
There is a notable lack of collaboration and data sharing among aviation training organizations. Improvements in areas such as connectivity, courseware production values, virtual reality (VR), and augmented reality (AR) increasingly support an immersive, more realistic training environment. Additionally, advances in educational techniques and tools such as adaptive learning hold the promise for enhancing the effectiveness and efficiency of academic training.

In formulating a plan for the new forum, the approach used to facilitate collaboration between the FAA and industry with respect to Extended Envelope Training (EET) may be a valuable model. Keys to the success of EET included industry collaboration and cooperation surrounding its rollout, as well as the FAA’s willingness to allow industry access to training and simulator resources at its facilities in Oklahoma City. This unprecedented level of collaboration allowed participating training organizations to develop the most effective courseware for mitigating the risk of loss of control in flight while meeting the regulatory requirements for Upset Prevention and Recovery Training.

In addition to establishing a new forum, outreach and engagement by the FAA in existing industry forums will be key to maximizing the inclusion of new technologies and methods across the industry and facilitating the sharing of lessons-learned and best practices among industry participants.

This would also support the professional development of FAA inspectors and other personnel engaging with the training community. Exposure to the knowledge and

lessons learned presented at industry roundtables and forums provides the inspector workforce with awareness and understanding of new training methods and technologies, and insight into how best to measure effectiveness and outcomes of proposed training programs using novel or innovative methods. The FAA can leverage attendance by individual personnel by encouraging post-attendance dissemination of new concepts and developments within attendees' organizations.

A digital library or repository of information and resources related to training would be of great assistance to certificate holders developing content and FAA inspectors evaluating such content. Extensive material from government, academic, and other resources exist that could prove useful in such efforts. Unfortunately, this material is currently (a) not readily accessible in one place, (b) is not curated or integrated in a way that allows the easy determination of what will likely be effective under each circumstance, and (c) is not continually kept up-to-date.

The P3 WG acknowledges previous work by the ACT ARC Effectiveness of Knowledge Training Workgroup (EKT WG), and drew significantly from ACT ARC Recommendation 20-12, which was drafted by the EKT WG, in creating Recommendation 24-1(d).

Barriers and Constraints
The FAA's ability to foster the collaboration described is subject to prioritization among *various efforts and initiatives competing for limited FAA resources.*

Recommendation 24-1(e):
Continue to take action to ensure the availability of adequate numbers of Designated Pilot Examiners (DPE) and Aviation Safety Inspectors (ASI) to satisfy anticipated practical examination needs.

Rationale
In its Industry Landscape Report the P3 WG identified a lack of Designated Pilot Examiners, especially in certain geographical regions and during certain seasonal periods, as a barrier to cost effective and quality training of a pilot during their pursuit of a professional piloting career. The perceived issue is complex and has many contributing factors, among them:

1. Insufficient numbers of DPEs, overall.
2. A small percentage of DPEs performing the majority of exams.
3. Insufficient numbers of DPEs in certain regions.
4. Subpar processes for applying to become a DPE.
5. Regional differences in the DPE application process.
6. Suboptimal management of applicant requests for a DPE during the scheduling process.
7. Applicants showing up for an exam with incorrect paperwork, etc. resulting in the exam never starting and a wasted exam time slot.
8. Inadequate DPE selection and training processes.

A combination of these issues and inefficiencies can, and does, cause delays for applicants for the PPC, CPC, and ATP certificates, as well as the CFI, CFII, Instrument and multi-engine ratings.

The ACT ARC believes that addressing these issues will:

1. Save costs and time for the applicant.
2. More effectively provide a pipeline of candidates for the air carriers.

3. Increase efficiency for the DPE to allow more testing events.
4. Increase efficiencies for the FAA in its oversight of the DPE program.
5. Increase capacity of DPEs.

Aviation Rulemaking Advisory Committee Designated Pilot Examiner Reforms Working Group (ARAC DPER WG)

The US Congress, in the FAA Reauthorization ACT of 2018, acknowledged a need on the FAA's part to address DPE issues. In response to the FAA's subsequent request, the Aviation Rulemaking Advisory Committee (ARAC) established the Designated Pilot Examiner Reform Working Group (DPER WG) to make recommendations to the FAA to holistically reform the DPE process. The ARAC Steering Committee approved the DPER WG's recommendations and the FAA accepted them for action in 2021. This body of work is contained in the *Aviation Rulemaking Advisory Committee Designated Pilot Examiner Reforms Working Group (ARAC DPER WG)- A Report from the Designated Pilot Examiner Reforms Working Group to the Aviation Rulemaking Advisory Committee*, dated June 17, 2021.

The FAA's work in response to the DPER WG's recommendations remains ongoing. The FAA provided a response update to the ARAC called *FAA Response to the Report from the Designated Pilot Examiner Reforms Working Group to the Aviation Rulemaking Advisory Committee*, dated May 25, 2022.

It is the opinion of the ACT ARC that these two documents set a powerful path forward to relieve the inconsistencies and add efficiency to the DPE process while increasing the oversight of the FAA to ensure quality and standardization of the DPE cadre as well as meet the intent of the 2018 FAA Reauthorization ACT. The ACT ARC believes that when these recommendations, as responded to by the FAA, are fully implemented, this will go a long way toward addressing the DPE issues and the concerns identified by the P3 WG.

The ACT ARC also recommends that the FAA:

1. Focus its attention on the recommendation to establish a National Oversight Model for the DPE process. This Model and new Oversight Office will be a key element in fully realizing the recommendations of the ARAC DPER WG.
2. Design a concrete way to measure the effectiveness of the implemented recommendations to include key results and metrics to ensure lasting, positive change.
3. Develop the tools necessary to ensure the applicant scheduling process becomes more efficient. Currently, approximately 25-30% of scheduled testing events fail to happen "as scheduled", due to administrative errors by the applicant.[6]

Organization Designation Authorization (ODA)

The foundation of the FAA Organization Designation Authorization (ODA) Program is found in 14 CFR part 183, Subpart D. These rules were originally issued in 2006 and implemented in 2009, replacing multiple different organizational programs under the Aircraft Certification Service. ODAs permit the FAA to delegate specified activities

[6] Source: January 22, 2024, meeting with FAA Flight Standards Service, Delegation Program Branch (AFS–650)

including airman certification examinations, to trusted certificate holders. FAA Order 8100.15, Rev. B defines the types of ODAs and their available functions as well as the procedural requirements for the organization performing the authorized functions. Extending these approvals to all Part 141 and Part 142 Airman Certification ODA may increase the number of DPEs/TCEs under their oversight. The issuance of ODAs to certificated training providers allowing them to conduct pilot certificate examinations may alleviate some of the DPE availability issues identified above. The ACT ARC recommends the FAA explore the possibility of establishing ODA policy and procedures for training providers. As with the ARAC DPER WG recommendations, a series of metrics and key results should be developed and tracked by the FAA to ensure approval of appropriately qualified designees.

Barriers and Constraints
Barriers and constraints to implementation of the DPER WG's recommendations are addressed in the DPER WG's recommendation report and the FAA's May 25, 2022, response letter. A potential barrier to the portions of Recommendation 24-1(f) relating to ODAs is limitations on the resources needed to expand ODA policy to include pilot certification by Pilot Schools and other certificated training providers.

Recommendation 24-1(f):
Explore ways to validate and allow use of current and emerging technologies.

Rationale
As processing power, graphics rendering, user interfaces, motion tracking, and other technologies evolve, the capabilities and diversity of ground training devices are advancing at an ever-increasing pace. Examples of new technology applications in pilot training include:

- The addition of visual displays to flight training devices;
- Use of flat panel trainers for procedure familiarization;
- Tablet-based flight management system trainers;
- Use of virtual/augmented/mixed reality (VR/AR/MR) headsets for procedure and skill familiarization and reinforcement; and
- Use of artificial intelligence to drive adaptive training.

The ACT ARC believes allowing credit for and enabling the use of new technologies (where data or studies support such use as effective) could add value to training curricula.

The ACT ARC recommends the FAA conduct a structured study, comparing the performance of pilots trained using existing/traditional training methods and those trained using new technologies, to identify differences, if any.

Barriers and Constraints
A number of potential barriers and constraints exists regarding the use of new technologies in training. Beyond any rulemaking-related barriers, the use of simulation technology carries a risk of overreliance at the expense of gaining real world flight experience in an aircraft in the national airspace system, which is a key element of

primary flight training. There are also observed difficulties encountered when using certain technologies. The FAA should continuously evaluate physical and effectiveness limitations of use of any emerging technologies in a training environment.

Another obstacle is a relative lack of research and data regarding the use of new technologies in training. Any regulatory change would require significant evidentiary support, and systems or structures are needed to facilitate the capture of data or development of methodologies to demonstrate suitable value.

Additional Observations:
Limited numbers of potential pilots have access to personal or family wealth sufficient to pay for the training and education necessary to become professional pilots. The majority of individuals pursuing training with the objective of a flying career must borrow the needed funds. The grant of educational loans tends to be based on traditional lending values, with credit history and rating being the primary determinant of access to funds. In general, those in the initial stages of pursuing a professional aviation career are younger people with limited employment and credit history or ability to build a credit rating.

Issues related to financing of higher education costs are beyond the scope of the ACT ARC. Similarly, it is not within the FAA's mission to address Federal and lender policy relating to such issues. Nevertheless, the ACT ARC believes that changes to Federal policies intended to enhance availability of Federally funded or guaranteed loans for individuals pursuing professional piloting careers would have a favorable effect on the availability of capable and appropriately trained pilots who may otherwise be unable to pursue a flying career due to finances, not aptitude. Improving access to funds (and at favorable rates) would serve the administration's (and much of the industry) desire to expand the professional pilot career opportunity to a broader spectrum of the general population. This would greatly serve the goal of increased diversity among the pilot ranks as well as increasing the quantity of candidates within the training pipeline.

VI. Background Information

Proposed recommendation 24-1 addresses item 2 in the P3 WG Scope of Work and ACT ARC Initiative #48 (see below):

P3 WG Scope of Work:

2. With consideration of the current initiatives, previous ACT ARC recommendations concerning pilot pathway development and training data collection, trends to incorporate a competency-based training methodology that includes an analysis of pilot training needs and outcomes, and interest in leveraging advanced training technologies, is there room for creating an additional regulatory path for individuals seeking a professional piloting career? Please explain in the form of a recommendation. If yes, include any barriers or constraints to developing an additional regulatory path.

ACT ARC Initiatives:

- Initiative #48: Identify industry and military-led pathways and partnerships created to develop, diversify, and expand the professional pilot population. Identify any barriers or constraints that could require FAA action to include rulemaking or guidance updates and provide any recommendations based on this assessment.

Source Reports

- Aviation Rulemaking Advisory Committee Designated Pilot Examiner Reforms Working Group – A Report from the Designated Pilot Examiner Reforms Working Group to the Aviation Rulemaking Advisory Committee, June 17, 2021.
- FAA Response to the Report from the Designated Pilot Examiner Reforms Working Group to the Aviation Rulemaking Advisory Committee dated June 17, 2021, May 25, 2022.

References

- ACT ARC Recommendation 20-12, Outreach & Information Sharing
- Women in Aviation Advisory Board (WIAAB) Report – March 28, 2022
- Youth Access to American Jobs in Aviation Task Force (YIATF) Report – Sept 28, 2022

Attachments

- Appendix A – Recommended Requirements for Professional Flight Training Organizations (PFTO)
- Appendix B – Acronyms, Initializations, and Abbreviations
- Appendix C – P3 WG ACT ARC Steering Committee Industry Landscape Report

Appendix A – Recommended Requirements for Professional Flight Training Organizations (PFTO)

The ACT ARC recommends the following required characteristics and curriculum elements as prerequisites for flight training providers seeking the certification described in Recommendation 24-1(a):

- Demonstrated Performance
- Quality Management System
- Fleet/Device Requirements
  - Fleet
    - Single and Multi-engine airplanes
    - Technically advanced airplanes for all certificate and rating courses beyond PPC
  - Devices
    - Full Flight Simulator [Tasks are identified in Part 60 Table A1B]
    - Flight Training Device (Level 4, 5, 6, or 7) [Tasks are identified in Part 60, Table B1B.]
    - Other Devices
- Airline Oriented Training Environment
  - Use of Flows/Memory Items and Checklists
  - Standard Operating Procedures (SOP)/Flight Operations Manual (FOM)/Flight Crew Operating Manual (FCOM)
  - Operational Control
  - Minimum Equipment List/Configuration Deviation List
  - Ground Operations
  - Mentoring/professional development
  - Line Oriented Flight Training (LOFT)-type training experience
    - Multi-Crew Communications (All facets of the air carrier)
      - ATC-NAS & International Airspace Communications (to be evaluated during LOFT)
      - Ground
      - Dispatch
      - Scheduling
      - Management
      - Flight Attendants
      - Other air carrier personnel (gate agents, ground crew, etc.)
      - Passengers
- Industry Advisory Board (IAB)
- Screening and Selection Standards
  - Medical assessment (First Class Medical)
  - English language proficiency (Operational Level 4 – ICAO Language Proficiency Rating Scale)
  - Cognitive ability
    - Short term memory;
    - Performance of mental calculations; and

        - Verbal and numerical reasoning.
    - Ability to learn
    - Coordination/spatial ability
    - Judgment and interpersonal communication skills
        - Integrity
        - Professionalism
        - Leadership
        - Resource Management
        - Communication
        - Mentoring
- Instructional System Design (ISD)
- Part 5 Compliant Safety Management System (SMS)
    - Voluntary reporting program (Aviation Safety Action Program (ASAP)/Aviation Safety Reporting System (ASRS))
    - Flight Data Management/Flight Operational Quality Assurance (FOQA) on fleet
    - Risk management/mitigation program
    - Safety Culture
        - Safety Climate
        - Just Culture (Human Resources process for complaints/concerns)
        - Self-assessment
        - Safety I vs. Safety II
    - External Auditing
- Instructor/Evaluator Training
    - Flight instructor quality assurance program
    - Instructor standardization program
    - Advanced Qualification Program (AQP)-like recurrent instructor training
- Certificates Offered
    - Mandatory for course completion
        - Private Pilot Certificate (PPC)
        - Commercial Pilot Certificate (CPC)
        - Instrument rating
        - Single and multi-engine ratings
        - Certified Flight Instructor (CFI)
        - CFI-Instrument (CFII)
    - Optional - Multi-engine Instructor (MEI)
- Training Topics
    - Upset Prevention and Recovery Training (UPRT) - (both in aircraft and academic training)
    - Human Factors
        - Crew Resource Management (CRM)/Threat and Error Management (TEM)
        - Aviation Physiology/Medical Certification
            - Aeromedical standards and FAA medical certification
            - Fatigue/Alertness and Duty Limits
            - Hypoxia

- Spatial Disorientation
- Pilot Assistance Programs
  - Pilot Mental Health
  - Human Intervention Motivational Study (HIMS)
  - Pilot Peer Support

- Fitness for Duty/IMSAFE Checklist (Illness, medication, Stress, Alcohol, Fatigue, Emotion)
- Aeronautical Decision Making (ADM)
- Knowledge, Skills, & Attitude (KSA)

- Pilot Professional Development
  - Mentorship training including specific training for flight instructors and students
  - Communications skills
  - Interpersonal skills
  - Social skills
  - Maturity (DISC Evaluation)
  - Command and Leadership
  - CRM/Soft Skills
  - Ethics
- Academic best practices (student code of conduct and ethics, etc.)
- Jet Transition Course
  - Turbine/Turbojet Engines
  - Transport Category Aircraft Performance
  - Advanced aircraft systems
  - Advanced swept wing, high altitude Aerodynamics Principles (ground instruction)
  - High Altitude/High Performance Operations (academic and in-aircraft training)Maneuvers (practical to air carrier operations)
  - Departure-based scenarios based on airport altitude, aircraft max weight and max/min temperature ranges.
  - Energy Management
  - Low Energy States/Stalls
  - Upset Recovery
  - Exposure to and training in a High-Altitude Trainer
  - Challenge/Response Scenarios
  - Go/No Go Decision (weather, maintenance, etc.)
  - Runway incursion/Runway Awareness Advisory System (RAAS)
  - Engineered Material Arresting Systems (EMAS)
  - Runway Status Lights (RWSL)
  - Meteorology/Adverse Weather
  - Low Level Wind Shear (LLWS)
  - Windshear Detection & Escape Maneuvers
  - Cold Wx Operations
    - Icing/De-icing/Anti-ice
  - Traffic Collision Avoidance System (TCAS)/Airborne Collision Avoidance System (ACAS)

        - Enhanced Ground Proximity Warning System (EGPWS)
        - Weather Radar
        - Electronic Flight Bag
        - Automation management
            - Flightpath Management
            - Flight Mode Annunciator (FMA)
            - Flight Management System (FMS)
            - Controller-Pilot Data Link Communications (CPDLC)
            - Satellite Communications (SatComm)
            - Datalink
            - High Frequency (HF) Radio Communications
            - Autopilot
            - Flight Director
            - Mode Control Panel
            - Autoland/Cat II/III
            - Area Navigation (RNAV)/Vertical Navigation (VNAV)
            - Heads Up Display (HUD)/Enhanced Flight Visualization Systems (EFVS)
            - Global Positioning System (GPS) interference
        - High density airport/airspace ops (in aircraft or a realistic simulated environment)
    - Safety Systems Academics
- Course Sequencing
- Minimum Ground Training Requirements
    - Equivalent to 30 semester hours classroom training
- Minimum Flight Training Requirements
- Instructional Environment/Methods – primarily in-person, instructor-led learning
- Data Collection and Use
    - Use of performance data on graduates provided by industry partners for instructional design purposes
    - ASIAS-like information exchange for training providers
- Transferability

Appendix B – Acronyms, Initializations, and Abbreviations

Term	Acronym/Initialization/Abbreviation
14 CFR part 121	Part 121
14 CFR part 135	Part 135
14 CFR part 141	Part 141
14 CFR part 142	Part 142
14 CFR part 61	Part 61
ACT ARC Effectiveness of Knowledge Training Workgroup	EKT WG
Advanced Aviation Training Device	AATD
Aeronautical Decision Making	ADM
Air Carrier Training Aviation Rulemaking Committee	ACT ARC
Airborne Collision Avoidance System	ACAS
Airline Transport Pilot Certificate	ATP
Airline Transport Pilot Certificate with restricted privileges	R–ATP
Airman Certification Standards	ACS
Analyze, Design, Develop, Implement, and Evaluate model	ADDIE
Area Navigation	RNAV
ATP Certification Training Program	ATP–CTP
Augmented Reality	AR
Aviation Accreditation Board International	AABI
Aviation Rulemaking Advisory Committee DPE Reforms Working Group	ARAC DPER WG
Aviation Safety Action Program	ASAP
Aviation Safety Information Analysis and Sharing	ASIAS
Aviation Safety Inspector	ASI
Aviation Safety Reporting System	ASRS
Certified Flight Instructor Certificate	CFI
CFI-Instrument	CFII
Commercial Pilot Certificate	CPC
Configuration Deviation List	CDL
Controller-Pilot Data Link Communications	CPDLC
Crew Resource Management	CRM
Designated Pilot Examiner	DPE
Enhanced Flight Vision System	EFVS
Enhanced Ground Proximity Warning System	EGPWS
Extended Envelope Training	EET
Engineered Material Arresting System	EMAS

Federal Aviation Administration	FAA
Flight Crew Operating Manual	FCOM
Flight Management System	FMS
Flight Mode Annunciator	FMA
Flight Operational Quality Assurance	FOQA
Flight Operations Manual	FOM
Flight Standards District Office	FSDO
Flight Simulation Training Device	FSTD
Flight Training Device	FTD
Formal Training Unit	FTU
Full Flight Simulator	FFS
Global Positioning System	GPS
Heads Up Display	HUD
High Frequency radio	HF
Human Intervention Motivational Study	HIMS
Illness, Medication, Stress, Alcohol, Fatigue, Emotion checklist	IMSAFE
Immersive Training Device	ITD
Industry Advisory Board	IAB
Instructional System Design	ISD
Integrated Procedures Trainer	IPT
Inter-rater Reliability	IRR
Knowledge, Skills, and Attitudes assessment	KSA
Line Oriented Flight Training	LOFT
Low Level Wind Shear	LLWS
Minimum Equipment List	MEL
Mixed Reality	MR
Multi-engine Instructor	MEI
Organization Designation Authorization	ODA
Pilot in Command	PIC
Pipeline, Pathways, & Partnerships Workgroup	P3 WG
Private Pilot Certificate	PPC
Professional Flight Training Organization	PFTO
Quality Management System	QMS
Runway Awareness Advisory System	RAAS
Runway Status Lights	RWSL
Safety Management System	SMS
Satellite Communications	SatComm
Second in Command	SIC
Standard Operating Procedures	SOP
Technically Advanced Airplane	TAA
Threat and Error Management	TEM

Title 14 Code of Federal Regulations	14 CFR
Traffic Alert and Collision Avoidance System	TCAS
Upset Prevention and Recovery Training	UPRT
US Air Force Undergraduate Pilot Training	UPT
Vertical Navigation	VNAV
Virtual Reality	VR

Appendix C

The Pipeline, Pathways, & Partnerships Workgroup (P3 WG)
January 10, 2024,ACT ARC Steering Committee
Industry Landscape Report

THE PIPELINE, PATHWAYS, & PARTNERSHIPS WORKGROUP (P3 WG)

ACT ARC STEERING COMMITTEE INDUSTRY LANDSCAPE REPORT

January 10, 2024

EXECUTIVE SUMMARY

PILOT SUPPLY AND DEMAND

Many air carriers, particularly regional air carriers, have experienced challenges hiring pilots in recent years as demand and supply cycles respond to continuously changing conditions and influences. Whether or not this constitutes a pilot shortage may be a subjective determination.

From a individual's perspective, the greatest obstacle faced by a person considering a career as a professional pilot is the daunting cost of obtaining the necessary certificates, qualifications, and experience.

Legislative and Regulatory Factors

The Federal Aviation Administration Extension Act of 2010 and the Pilot Certification and Qualification Requirements Final Rule (the FOQ Rule) modified the qualification requirements for pilots in part 121 operations by: 1) increasing minimum certificate requirements for air carrier first officers, and requiring additional training for pilots seeking such certification; and 2) allowing former military pilots and those completing flight training in conjunction with FAA-authorized collegiate aviation degree programs to obtain Airline Transport Pilot certificates with restricted privileges (R–ATP) making them eligible to act as air carrier first officers with less aeronautical experience than is otherwise required.

As the aviation industry has evolved, the employment landscape for prospective pilots has become more diverse and varied. Pilots seeking entry-level employment have multiple options, including, but not limited to regional, low cost, and ultra low cost air carriers. This diversity of choice, combined with favorable supply and demand conditions, has given prospective pilots the freedom to consider a variety of job and lifestyle quality factors when pursuing employment.

PILOT TRAINING ECOSYSTEM

Individuals seeking to become airline pilots may choose from a variety of training and experience pathways to obtain an ATP or R–ATP and become eligible for employment by a part 121 air carrier.

Flight training in the U.S. Armed Forces offers an opportunity to acquire high quality flight training and aeronautical experience while serving one's country, and without incurring the expenses associated with civilian flight training, but associated service commitments and the rigors of military life may make this a less attractive option for some individuals.

Collegiate aviation programs incorporate flight training coupled with academic (classroom) training in knowledge areas specified in the pilot certification standards, as well as other aviation-related subjects, with a structured pathway to meeting competency and experiential benchmarks. Most colleges and universities offering aviation programs are authorized by the FAA to certify graduates as eligible to apply for an R–ATP certificate. These institutions' curricula must contain course content specified by the FAA and are further informed by industry feedback.

Individuals not obtaining flight training in the Armed Forces or FAA-authorized collegiate programs may obtain training from providers operating under Title 14 Code of Federal Regulations (14 CFR) part 61 or 141. Such pilots are not eligible to apply for an R–ATP certificate but may apply for an unrestricted ATP certificate upon completing the requirements of 14 CFR § 61.159, including a minimum of 1,500 hours of flight experience.

Training providers offering such training vary widely in terms of size and quality. Of the training providers not authorized to qualify students for an R–ATP, typically those with the most robust programs are flight academies. From a regulatory standpoint, there is no difference between flight academies and other flight schools, but the term typically describes providers offering structured, career-oriented flight training programs focused on developing professional pilots from zero or near zero time to issuance of a CFI certificate. Flight academies may be affiliated with an air carrier or may be independent.

A factor that can affect quality of instruction at both collegiate aviation programs and flight academies is the availability of instructors. At most aviation universities and flight academies, the majority of flight instructors, particularly those providing instruction to new students, are former students building aeronautical experience with the objective of obtaining a job offer from an air carrier. Turnover, as such instructors are hired by air carriers or other employers, limits the experience of available instructors and creates challenges for training providers seeking to provide quality instruction.

Training Outreach/Youth Flight Training

In recognition of the need to recruit future generations of pilots, there are a variety of initiatives and efforts intended to equip students with the competencies relevant to a professional aviation career, and to encourage young people to consider careers as professional aviators, particularly those in demographic segments underrepresented in the aviation industry.

EXPERIENCE BUILDING

With the exception of Armed Forces pilots, all pilots must find a way to build aeronautical experience after obtaining their commercial pilot license and instrument and multiengine ratings, so they can qualify for issuance of a restricted or unrestricted ATP certificate. The majority of pilots obtain experience by working as flight instructors. Instruction not only builds experience but reinforces the instructor's own knowledge and skills and develops tacit knowledge such as judgment, command, leadership, and decision-making skills. Other than flight instructing, pilots may build experience through paid or unpaid flying conducted under part 91, paid flying conducted under parts 135, or flying in the National Guard or Armed Forces reserves.

PILOT SOURCING INITIATIVES

Many air carriers participate in outreach and other programs intended to aid in recruiting future pilots. These efforts may be cadet programs, in which air carriers build relationships with prospective pilots enrolled in aviation universities or flight academies, pilot development programs, in which pilots assist students in obtaining flight training with an expectation of future employment, airline flight academies in which air carriers administer flight training to students directly or through contracted training providers, and employee development programs, in which air carriers provide assistance to non-pilot employees seeking to become pilots.

QUALITY AND CAPACITY OF TRAINING

A variety of factors impact the quality and capacity of flight training available to students at flight schools, flight academies, and aviation universities, including numbers of aircraft and instructors available for training, instructor turnover as instructors build experience and are hired by air carriers or other operators, availability of Designated Pilot Examiners, and infrastructure limitations. Secondary factors impacting instructor, aircraft, and facility availability in the United States include the absorption of training capacity by international students obtaining flight training from U.S. providers.

COST OF TRAINING/FINANCE

The greatest obstacles to becoming a professional pilot may be, for most individuals, the cost of flight training, the lack of easy access to financing, and the inability to make repayment on financing immediately after completing training.

Pursuing a career in aviation can be a costly endeavor. While flight training and related costs vary widely, the costs of obtaining a commercial pilot certificate with multi-engine and instrument ratings typically range from $75,000 to over $250,000. Most individuals pursuing a professional piloting career must rely on a

combination of savings, Federal financial aid in the form of grants or loans (for those in collegiate aviation programs), private loans, and scholarships to fund the cost of training.

Veterans or dependents of veterans or active duty servicemembers may take advantage of programs offered by the U.S. Department of Veterans Affairs or the Armed Forces themselves to fund or offset the cost of flight training.
As noted above, the costs of obtaining flight training are significant, and many individuals pursuing such training have little awareness of the financing options available to them or of the impacts of borrowing large sums of money at unfavorable terms. The lack of availability of affordable education and financial aid options and the level of student debt in the U.S. are complex, multifaceted issues requiring comprehensive solutions.

KEY FINDINGS

- For individuals with the requisite aptitude and interest to pursue a career as a professional pilot, the greatest obstacles to achieving that goal may be the cost of flight training, the lack of easy access to financing, and the inability to make repayment on financing immediately after completing training.
- Regional and seasonable availability of Designated Pilot Examiners (DPE) has a significant impact on some students' ability to timely complete oral and practical examinations for certificates and ratings.
- Training and career pathways to becoming a professional pilot are increasing in both number and variety.
- Some demographic groups, particularly women and persons of color, are disproportionately represented in the ranks of professional pilots.
- Despite a wide variety of training providers available to aspiring pilots, they lack ready access to reliable information needed to make meaningful comparisons between options.

  Secondary to this issue is a lack of financial literacy or awareness of available financing options, lack of appreciation of the impacts of borrowing large sums of money at unfavorable terms.
- There is no regulatory difference between flight academies offering robust, career-oriented training programs and flight schools with more general programs.

SCOPE OF REPORT

This report summarizes current initiatives and actions intended to develop, diversify, and expand the professional pilot workforce in the United States. It focuses on the requirements for becoming a professional pilot, the challenges and obstacles faced by individuals seeking to become a professional pilot, and the available pathways and partnerships that facilitate the development of professional pilots.

ADDITIONAL INFORMATION

Additional information, corrections or questions should be directed to:

Michael Dee
Workgroup Co–lead
Managing Director, Flight Operations, Republic Airways
T. +1-317-484-6020 E. mdee@rjet.com

Paul Ryder
Workgroup Co–lead
Air Line Pilots Association, International (ALPA)
T. +1-703-209-1341 E. Paul.Ryder@alpa.org

Neil Modzelewski, PMP
Director of Regulatory and Program Support, PAI Consulting
T. +1-703-672-5408 E. NeilModzelewski@paiconsulting.com

TABLE OF CONTENTS

Contents

TERMS AND DEFINITIONS

Table 1 – Terms and Conditions

Term	Definition
Air Carrier	An organization certificated by a designated governmental agency to carry persons or cargo by air for hire. Also known as airline.
Air Transport Pilot Certificate (ATP)	The highest level of aircraft pilot certificate. In the United States, those certified as airline transport pilots (unconditional) are authorized to act as pilot in command in scheduled air carrier operations under 14 CFR part 121.
Air Transport Pilot Certificate with Restricted Privileges (R–ATP)	A pilot certificate issued to individuals who satisfy the knowledge and flight proficiency requirements for an Air Transport Pilot certificate, but do not satisfy the aeronautical experience or age requirements. An individual may qualify for issuance of a Restricted ATP certificate by: a) completing an aviation degree program incorporating flight training at an institution of higher learning that has been authorized by the FAA to certify graduates as eligible for the issuance of such a certificate, successfully completing undergraduate flight training and receiving a rating as a pilot in in the U.S. Armed Forces, or obtaining 1,500 hours total aeronautical experience; and b) obtaining the amounts of aeronautical experience prescribed under 14 CFR § 61.160, including 200 hours of cross-country flight time. The holder of an R-ATP certificate may act as second-in-command in domestic scheduled air carrier operations under 14 CFR part 121 until accumulating sufficient aeronautical experience to qualify for an unrestricted ATP certificate. Also known as Restricted ATP.
Airline	See Air Carrier.
Airline Flight Academy	A flight academy operated by or affiliated with a specific air carrier.
Airman Certification Standards (ACS)	The Airman Certification Standards prescribes the knowledge, risk management, and flight proficiency standards for the pilot certification that must be satisfied to be eligible for the issuance of various pilot certificates and ratings.
ATP Certification Training Program (ATP CTP)	A training program covering advanced knowledge areas and incorporating flight training in Flight Simulator Training Devices (FSTD) that a pilot seeking an ATP Certificate with an Airplane Category rating and a Multi-engine Class or type rating must successfully complete before being eligible to undergo the ATP Knowledge Test. 14 CFR § 61.156 prescribes the content of an ATP CTP.

Term	Definition
Cadet Program	A program administered by an air carrier under which it forms relationships with potential future pilots while they are pursuing flight training and accumulating aeronautical experience. See also Pilot Development Program.
Certified Flight Instructor Certificate (CFI)	A certificate issued to a pilot who has satisfied the knowledge, flight proficiency, and experience requirements prescribed under subpart H of 14 CFR part 61 to be eligible to administer flight instruction and issue endorsements to students.
Certified Flight Instructor Certificate with Instrument Rating (CFII)	A certificate issued to a pilot who has satisfied the knowledge, flight proficiency, and experience requirements prescribed under subpart H of 14 CFR part 61 to be eligible to administer flight instruction and issue endorsements to students pursuing an instrument rating.
Class B Airspace	Airspace surrounding the busiest airports within the United States, having at least an operational Air Traffic Control Tower and Terminal Radar Approach Control facility. Operation within Class B Airspace requires a clearance from the air traffic control facility having jurisdiction and must be in accordance with procedures and rules established by air traffic control.
Collegiate Aviation (Training)	Degree programs with an aviation focus including integrated flight training offered by an accredited institution of higher learning. See also Institutional Authority.
Commercial Pilot Certificate (CPC)	A certificate issued to a pilot who has satisfied the knowledge, flight proficiency, and experience requirements prescribed under subpart F of 14 CFR part 61. The holder of a Commercial Pilot Certificate may act as pilot-in-command of an aircraft for compensation or hire, as well as carry persons or property for compensation or hire. Also known as CPL.
Crew Resource Management (CRM)	The effective use of all available resources for flight crew personnel to assure a safe and efficient operation, reducing error, avoiding stress and increasing efficiency. See also Advisory Circular (AC) 120–51E.
Designated Pilot Examiner (DPE)	A qualified pilot who is designated by the FAA to evaluate other pilots on behalf of the FAA for specifically authorized testing and checking events. A DPE must meet all regulatory requirements and 8900.1 guidance and be nominated for this position. A DPE is not an employee of the FAA. See also 14 CFR § 61.1 - "Examiner".
Direct Federal Loans	Loans issued or backed by the U.S. Department of Education for the purposes of pursuing studies at an institution of higher learning.
Federal Financial Aid	Various grants, loans, loan guarantees, and other financial assistance provided by the U.S. Department of Education to

Term	Definition
	students pursuing studies at an institution of higher learning. Also known as Title IV Assistance.
Federal Supplemental Educational Opportunity Grants (FSEOG)	A needs-based grant provided by the U.S. Department of Education to students pursuing studies at an institution of higher learning.
Federal Work Study	A Federal financial aid program providing funding for part-time jobs for students with financial need pursuing studies at an institution of higher learning.
Fixed Base Operator (FBO)	An organization granted the right by an airport to operate at the airport and provide aeronautical services such as fueling, hangaring, tie-down and parking, aircraft rental, aircraft maintenance, flight instruction, and similar services. In common practice, an FBO is the primary provider of support services to general aviation operators at a public-use airport.
Flight Academy	For the purposes of this report, a flight academy is a career-oriented flight training provider focused on administering training to individuals seeking a career as a professional pilot. From a regulatory standpoint, there is no clear distinction between a flight academy and a flight school or other flight training provider not certificated as a pilot school under 14 CFR part 141 or flight training center under 14 CFR part 142.
Flight School	A business operated with the purpose of providing flight training to students.
Flight Training Device (FTD)	A replica of aircraft instruments, equipment, panels, and controls in an open flight deck area or an enclosed aircraft cockpit 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 14 CFR and the qualification performance standard (QPS) for a specific FTD qualification level.
Free Application for Federal Student Aid (FAFSA)	The standard application for Federal Financial Aid administered under Title IV of the Higher Education Act of 1965 (P.L. 89-329), as amended.

Term	Definition
Full-Flight Simulator (FFS)	A replica of a specific type; or make, model, and series aircraft cockpit. It includes the assemblage of equipment and computer programs necessary to represent aircraft operations in ground and flight conditions, a visual system providing an out-of-the-cockpit view, a system that provides cues at least equivalent to those of a three-degree-of-freedom motion system, and has the full range of capabilities of the systems installed in the device as described in part 60 of 14 CFR and the qualification performance standards (QPS) for a specific FFS qualification level.
General Aviation (GA)	All civil aviation aircraft operations except for commercial air transport or aerial work.
GI Bill	A Federal program that authorizes educational assistance benefits for veterans and servicemembers and their family members in exchange for service in the uniformed services. GI Bill programs encourage recruitment and retention in the uniformed services and facilitate readjustment to the civilian workforce following such service.
Independent Flight Academy	A flight academy not operated by or affiliated with a specific air carrier.
Institutional Authority	See Letter of Authorization
Letter of Authorization for Institutes of Higher Learning	A letter issued by the FAA to an institution of higher learning under 14 CFR § 61.169, authorizing it to certify graduates of degree programs incorporating flight training as eligible for issuance of Restricted ATP certificate under 14 CFR § 61.160(b), (c), or (d). Also known as Institutional Authority.
Low Cost Carrier (LCC)	A low-cost carrier or low-cost airline (LCC), also called no-frills, budget or discount carrier or airline, is an airline that is operated with an emphasis on minimizing operating costs and without some of the traditional services and amenities of traditional airlines, resulting in lower fares and fewer comforts
Mainline Air Carrier	A mainline flight is a flight operated by an airline's main operating unit, rather than by regional alliances, regional codeshares, regional subsidiaries, or wholly owned subsidiaries offering low-cost operations. Mainline carriers typically operate between hub airports within their network and on international or long-haul services.

Term	Definition
Montgomery GI Bill	A GI Bill program to provide educational assistance benefits to veterans, servicemembers, and their families. The Veterans' Administration is phasing out the Montgomery GI Bill in favor of the Post-9/11 GI Bill.
Multi Engine Rating (MEL [Multi-engine Land])	A multiengine rating is an FAA-approved additional certification that qualifies pilots to fly aircraft with more than one engine. Both private pilots and commercial pilots need to obtain this rating on their respective certificates before operating a multiengine aircraft.
National Airspace System (NAS)	A network of controlled and uncontrolled airspace, both domestic and oceanic. It also includes air navigation facilities, equipment and services; airports and landing areas; aeronautical charts, information and services; rules and regulations; procedures and technical information; and manpower and material.
Operator	The holder of an operating certificate authorized to conduct operations in accordance Federal regulations. Also known as air operator.
Part 61	The Federal regulations prescribing the knowledge, flight proficiency, and experience requirements for the issuance of pilot certificates and ratings. Also known as 14 CFR part 61 (Certification: Pilots, Flight Instructors, and Ground Instructors).
Part 91	The Federal regulations prescribing the general operating and flight rules in the United States. See also 14 CFR part 91.
Part 91, Subpart K (91K)	The Federal regulations governing fractional ownership programs, under which multiple owners have fractional interests in multiple aircraft, which are managed and maintained by a program manager.
Part 121	Operating requirements for domestic, flag, and supplemental air carrier operations certificated in the United States. See also 14 CFR part 121.
Part 135	Operating requirements for Commuter and on Demand operations and Rules Governing Persons on Board Such Aircraft. See 14 CFR part 135.
Part 141	The Federal regulations governing certification and operation of pilot schools. Unlike pilot training conducted under 14 CFR part 61, part 141 pilot schools are required to use a structured training program and syllabus. Part 141 pilot schools may be able to provide a greater variety of training aids and require dedicated training facilities, flight instructor oversight, and FAA-approved course curricula. Colleges and universities, which may offer aviation degrees, often provide pilot training under Part 141. Also known as 14 CFR part 141 (Pilot Schools).

Term	Definition
Pell Grant	A needs-based grant provided by the U.S. Department of Education to students pursuing studies at an institution of higher learning.
Pilot Development Program	A program administered by an air carrier under which it forms relationships with prospective future pilots while they are pursuing flight training and accumulating aeronautical experience. Pilot development programs may receive financial assistance in the form of stipends or funding of flight training. Pilot development programs may be geared toward increasing diversity, with selection criteria based on minority class status.
Pilot Training Standards (PTS)	Standards for knowledge, skill, and experience required to be eligible for the issuance of various pilot certificates and ratings. Many of the Practical Test Standards have been updated to the Airman Certification System and associated Airman Certification Standards.
PLUS Loan	A loan issued or backed by the U.S. Department of Education, to provide funds to parents providing assistance to children pursuing studies at an institution of higher learning.
Post-9/11 GI Bill	A GI Bill program to provide educational assistance benefits to veterans, servicemembers, and their families. The majority of GI Bill benefits are issued under the Post-9/11 GI Bill. Also known as Chapter 33.
Private Pilot Certificate (PPC)	A certificate issued to a pilot who has satisfied the knowledge, flight proficiency, and experience requirements prescribed under subpart E of 14 CFR part 61. Also known as PPL.
Regional Air Carrier	Regional Air Carrier is a general classification of airline which typically operates scheduled passenger air service under a fee-for-departure or capacity purchase agreement in partnership with mainline, low-cost or ultra-low cost air carriers.
Restricted ATP (R–ATP)	See Air Transport Pilot Certificate with Restricted Privileges
Safety Management System (SMS)	A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies, and procedures. The objective of a Safety Management System is to provide a structured management approach to control safety risks in operations. Effective safety management must consider the organization's specific structures and processes related to the safety of operations.
Subsidized Loan	A Federal Financial Aid loan for which the U.S. Department of Education pays the interest accruing while the borrower remains enrolled in studies at an institution of higher learning.

Term	Definition
Survivors' and Dependents' Education Assistance (DEA)	A VA program providing benefits to spouses and children of veterans or service members who die in the line of duty, have a permanent complete disability related to their service, or are captured or forcibly detained in the line of duty, or missing in action for more than 90 days.
Tacit Knowledge	The knowledge, skills, and abilities an individual gains through experience that is often difficult to put into words or otherwise communicate. Tacit knowledge includes non-technical or soft skills such as, judgment, decision making, instrument scan, ATC communication, Crew Resource Management (CRM), etc.
Tuition Assistance	A U.S. Department of Defense program providing financial assistance toward the cost of tuition and course-specific fees for active-duty service members and reservists.
Ultra Low Cost Carrier (ULCC)	Ultra low-cost carriers (ULCC) are low cost carriers (LCC) that also have minimal extra amenities and services included in the fare and a greater number of add-on fees
Unsubsidized Loan	A Federal Financial Aid loan for which the borrower is responsible for payment interest accruing while the borrower remains enrolled in studies at an institution of higher learning. The accrued interest is typically capitalized (added to the original loan principle) once the borrower graduates and begins repayment.
Veteran Readiness and Employment	A VA program providing benefits toward educational and vocational training costs for veterans with a service-connected disability rating of at least 10 percent.
Veterans Administration (VA)	The U.S. Department of Veterans Affairs.
Yellow Ribbon Program	A VA program under which the Federal government provides matching financial aid to students enrolled at institutions of higher learning that have committed to provide financial assistance to eligible students.

Acronyms and Initializations

Table 2 - Acronyms and Initializations

91K	Part 91, Subpart K
AABI	Aviation Accreditation Board International
ACS	Airman Certification System/Standards
AMF–S	Air Mobility Fundamentals – Simulator
ANG	Air National Guard
AOPA	Aircraft Owners and Pilots Association

ARAC	Aviation Rulemaking Advisory Committee
ARC	Aviation Rulemaking Committee
ATP	Air Transport Pilot Certificate
ATP CTP	ATP Certification Training Program
CAP	Civil Air Patrol
CFI	Certified Flight Instructor Certificate
CFII	Certified Flight Instructor Certificate with Instrument Rating
CPC	Commercial Pilot Certificate
CRM	Crew Resource Management
DEA	Survivors' and Dependents' Education Assistance
DPE	Designated Pilot Examiner
EAA	Experimental Aircraft Association
FAFSA	Free Application for Federal Student Aid
FBO	Fixed Base Operator
FFS	Full-Flight Simulator
FSTD	Flight Simulation Training Device
FOQ (Rule)	Pilot Certification and Qualification Requirements Final Rule, also known as the Air Carrier First Officer Qualification Rule
FSEOG	Federal Supplemental Educational Opportunity Grants
FTD	Flight Training Device
GA	General Aviation
IFT	USAF Initial Flight Training
ITD	Immersive Training Device
JROTC	Junior Reserve Officers' Training Corps
LCC	Low Cost Carrier
MEL [Multi-engine Land]	Multi Engine Rating
NAS	National Airspace System
NROTC	Naval Reserve Officers' Training Corps
NTSB	National Transportation Safety Board
PPC	Private Pilot Certificate
PTS	Pilot Training Standards
R–ATP	Air Transport Pilot Certificate with Restricted Privileges
ROTC	Reserve Officers' Training Corps
SMS	Safety Management System

STEM	Curriculum for Science, Technology, Engineering, and Mathematics
ULCC	Ultra Low Cost Carrier
UHT	USAF Undergraduate Helicopter Training
UPT	USAF Undergraduate Pilot Training
USAF	United States Air Force
VA	Veterans Administration

PILOT SUPPLY AND DEMAND

Over the history of the commercial aviation industry, the ability of air carriers to recruit, hire, and retain pilots has been subject to supply and demand forces that have fluctuated broadly in response to a variety of factors, trends, and events.

In recent years, pilot hiring and turnover dynamics in the air carrier industry have undergone significant change. As intertwining demand and supply cycles continue to play out, increases in hiring rates at mainline air carriers have led to shorter transition times at regional air carriers for many pilots and, in some cases, pilots entering the commercial pilot workforce at the mainline air carrier level. Some regional air carriers and other operators that typically hire entry level pilots have experienced challenges recruiting, hiring, and retaining appropriately experienced and qualified pilots.

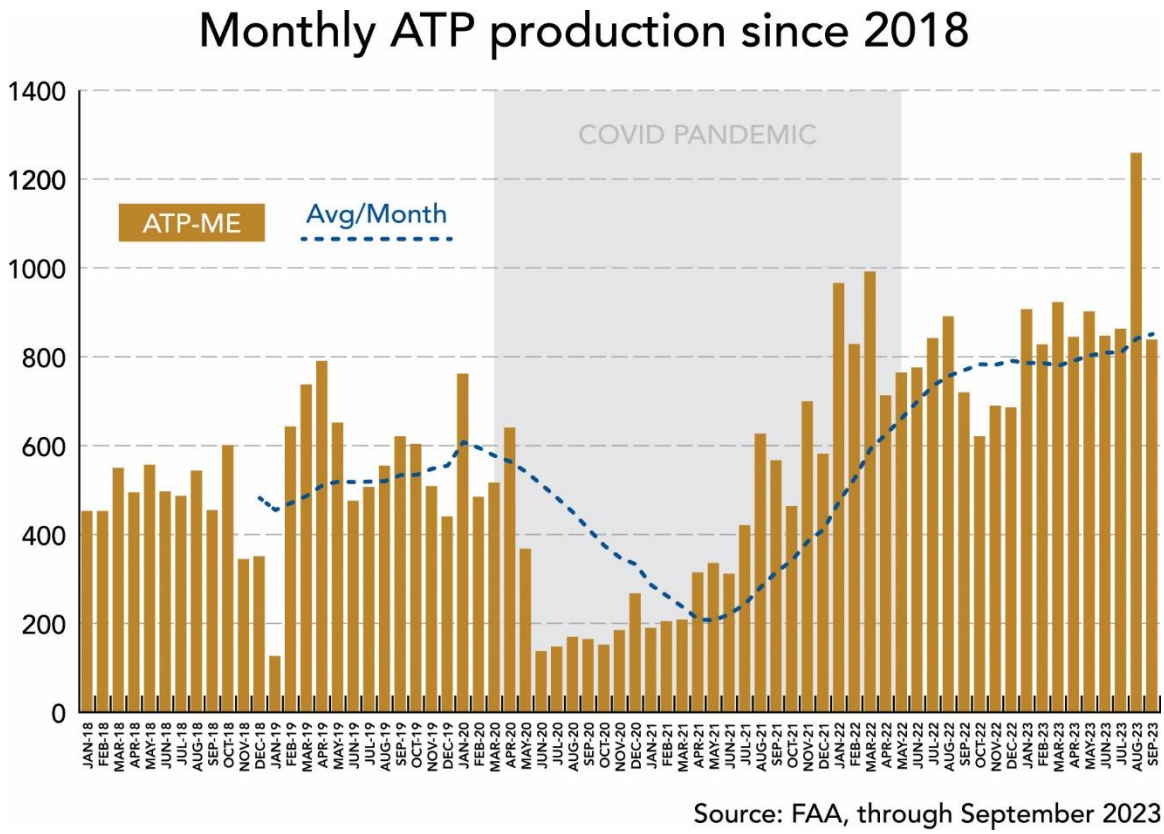

Figure 1 – Monthly ATP Production since 2018

At times, air carriers have been able to select from a pool of candidates with aeronautical experience greatly exceeding the certificate and other requirements

established by Federal regulations. At other times, the relative lack of available candidates meeting these requirements has made it challenging for operators to employ sufficient numbers of pilots to meet operational demands. Because demand for air travel is highly sensitive to disruptors such as domestic and world events, economic swings, and environmental changes, air carriers' hiring and training needs can change rapidly from one extreme to another.

In recent years, some segments of the aviation industry have experienced and continue to experience imbalances in pilot supply and demand. The aviation labor market remains subject to constant fluctuations and adjustments, and the industry's cyclical nature, the adaptability of airlines and training institutions, regulatory adjustments, and market dynamics all play a role in influencing and adjusting to these changes.

The factors affecting pilot supply and demand dynamics have included general economic trends affecting spending, as well as non-economic trends and events affecting demand for air travel, such as the terrorist attacks of September 11, 2001, and the novel coronavirus pandemic.[1]

The choice to pursue a career as a pilot presents numerous and varying challenges. The greatest obstacle faced by most individuals considering such a career is the daunting cost of pilot training. Flight school fees, aircraft rental, instructional materials, and exam expenses contribute to a substantial financial burden. The cost can range from tens of thousands to hundreds of thousands of dollars, depending on the type of certificates and ratings pursued in addition to whether the student attends a collegiate program.

Legislative and Regulatory Factors

Following a number of fatal aviation accidents, including the crash of Colgan Air Flight 3407 in Clarence Corners, New York on February 12, 2009, on August 1, 2010, the Aviation Safety and Federal Aviation Administration Extension Act of 2010, Public Law 111-216 (P.L. 111-216), which required the FAA to take certain actions, was signed into law.[2] In 2013, the FAA promulgated the Pilot Certification and Qualification Requirements Final Rule (the Air Carrier First

[1] Except when economic or non-economic factors affecting demand for air travel cause air carriers to reduce or suspend hiring of pilots, there is relatively constant need for new pilots as pilots reach the maximum age to act as a pilot in operations conducted under Title 14 Code of Federal Regulations (14 CFR) part 121 (part 121). (The current part 121 age limit under 14 CFR § 121.383(e) is 65.)

[2] In its Final Report on the Colgan Air Flight 3407 accident, the National Transportation Safety Board (NTSB) identified numerous relevant safety issues and made extensive safety recommendations.

Officer Qualification Rule or FOQ Rule). The FOQ Rule and P.L. 111-216, together, included the following requirements:[3]

1) All pilots acting as pilot in command or second in command in part 121 operations must hold an Airline Transport Pilot (ATP) certificate. (Prior to the effective date of the FOQ Rule, pilots acting as second in command in part 121 operations were required to hold a commercial pilot certificate with appropriate category, class, and type ratings.)
2) The minimum aeronautical experience required for the issuance of an ATP certificate is 1,500 hours. (The minimum flight time required for an ATP certificate was 1,500 hours prior to the issuance of P.L. 111-216 and the FOQ Rule, but P.L. 111-216 made this a statutory requirement that cannot be modified by rulemaking.)
3) An applicant for an ATP certificate with an airplane category multi-engine class rating must successfully complete an approved ATP Certification Training Program (ATP CTP).

P.L. 111-216 included a provision allowing the FAA to establish credit toward the 1,500 hour requirement for pilots completing specific academic training courses, based on a determination that completion of such courses would enhance safety more than requiring the pilot to fully comply with the 1,500 hour requirement. The FOQ Rule contained provisions allowing pilots acting as second in command in domestic part 121 operations to hold an ATP certificate with restricted privileges (Restricted ATP or R–ATP). The FOQ Rule further provided for issuance of R–ATP certificates to candidates with less than 1,500 hours[4] total flight time, provided they had completed specified academic training, as follows:[5]

- Pilots completing training and rated as a U.S. military pilot can obtain an R–ATP with a minimum of 750 hours total time (750 hours credit).
- Pilots completing a 4-year degree program in an aviation major from an institution of higher learning authorized by the FAA can obtain an R–ATP with a minimum of 1,000 hours total time (500 hours credit) or 1,250 hours

[3] Part 121 certification covers scheduled airline operations using aircraft with 10 or more passenger seats.
[2] Both P.L. 111-216 and the FOQ Rule contained numerous additional requirements and provisions not discussed here.
[4] Pilots who do not complete military flight training or an aviation degree program may, nevertheless, obtain an R–ATP under 14 CFR § 61.160(f). Such pilots receive no credit toward the 1,500 hour total flight time requirement, but may obtain an R–ATP with 200 hours of cross-country flight time, instead of the 500 hours required under 14 CFR § 61.159.
[5] The FOQ Rule also reduced the minimum age for issuance, which is 23 years for an unrestricted ATP, to 21 years for an R–ATP.

total time (250 hours credit), depending on the number of credit hours of relevant coursework completed.

- Pilots completing a 2-year degree program in an aviation major from an institution of higher learning authorized by the FAA can obtain an R–ATP with a minimum of 1,250 hours total time (250 hours credit).

Since publication of the FOQ Rule, all pilots employed by U.S.-based air carriers categorized by the FAA as part 121 operations must progress through flight and ground school training, culminating in the issuance of an ATP or R–ATP before they may fly in line operations. Each air carrier also establishes minimum aeronautical experience standards candidates must meet before being hired. These minimums must meet or exceed the regulatory requirements.

Early career pilots looking forward to becoming a professional airline pilot face a wider variety of career opportunities today than in the past. In the latter part of the 20th century, the pathway to becoming a flight crewmember with a mainline air carrier was fairly well defined. After accumulating sufficient aeronautical experience, the majority of pilots seeking such a career (other than former military fixed-wing pilots)[6] spent time at a regional air carrier before consideration would be given by a mainline air carrier because the aeronautical experience requirements set by those air carriers significantly exceeded those set by regional air carriers. Smaller numbers of pilots transitioned to large air carriers after accumulating aeronautical experience through other flying, such as business/corporate aviation.

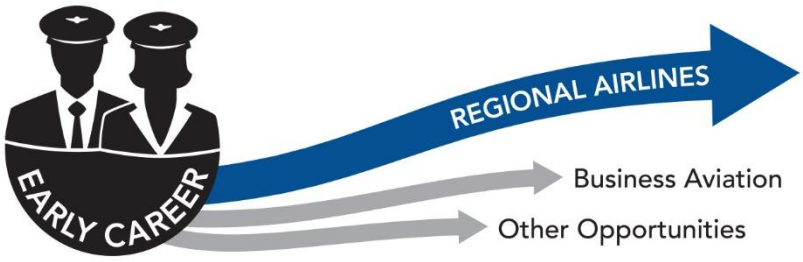

Figure 2 – Historical Professional Pilot Career Paths

Today, there is greater diversity in types of air carriers and other operators, with differing hiring criteria and standards. While most air carriers currently have identical hiring minimums, most mainline air carriers require much more experience for candidates to be considered competitive. For example, Delta Air Lines' published minimum flight time requirements are 1,500 hours of total

[6] See Military discussion under Pilot Training Ecosystem, below.

documented flight time with a minimum of 250 hours of PIC or SIC in an airplane category and 50 hours of multi-engine airplane time. However, to be considered a competitive candidate, a pilot should have between 2,500 and 7,000 hours of flight time and more than 1,000 hours of turbine-engine PIC time. Low cost and ultra low cost carriers (LCC and ULCC) have the same published minimum requirements as Delta, but to be considered competitive, a pilot needs between 2,000 and 5,000 hours of flight time and previous part 121 or military flight experience. Regional air carriers will hire pilots with the published minimum of 1,500 hours of total flight time or Restricted ATP minimums and 25 hours of multi-engine airplane time.

Figure 3 – Modern Professional Pilot Career Paths

In today's market, this provides the early career pilot, who has documented sufficient knowledge, skill, and flight proficiency to obtain the certificates required to enter airline flight operations, with enhanced employment opportunities beyond those of regional carriers.

ATP CTP

Section 217 of P.L. 111-216 required the FAA to modify the requirements for an ATP or R–ATP certificate. Under the revised requirements, to be eligible, pilots must receive "flight training, academic training, or operational experience that will prepare a pilot at a minimum to –

a. Function effectively in a multipilot environment;
b. Function effectively in adverse weather conditions, including icing conditions;
c. Function effectively during high altitude operations;
d. Adhere to the highest professional standards; and
e. Function effectively in an air carrier operational environment."

In 2015 the FAA finalized rules including 14 CFR § 61.156, which made completion of an Airline Transport Pilot Certification Training Program (ATP-CTP) a prerequisite to taking the ATP knowledge Test. This course was designed to bridge the knowledge gap identified by First Officer Qualification Aviation Rulemaking Committee (FOQ ARC) in 2010. The FOQ ARC was composed of subject matter experts from across the aviation industry with expertise in pilot training and air carrier qualification standards. While P.L. 111-216 focused on air carrier training, the FAA knew the knowledge gap exists for any pilot trying to obtain an ATP certificate. Therefore, it made the ATP-CTP a prerequisite for any pilot seeking to take the ATP knowledge exam. FAA Advisory Circular (AC) 61-138 provides guidance on the development of ATP-CTP courses.

The ATP-CTP course consists of 30 hours of ground instruction covering aerodynamics, meteorology, and air carrier operations. Additionally, 10 hours of flight training is required (4 hours in an FTD and 6 hours in an FFS) which covers automation, navigation, runway safety, adverse weather, high altitude operations, stalls, and upset prevention and recovery.

Upon completion of the ATP-CTP evaluation, applicants will be issued a graduation certificate by the training provider. The applicant must present this certificate when they take the ATP knowledge test.

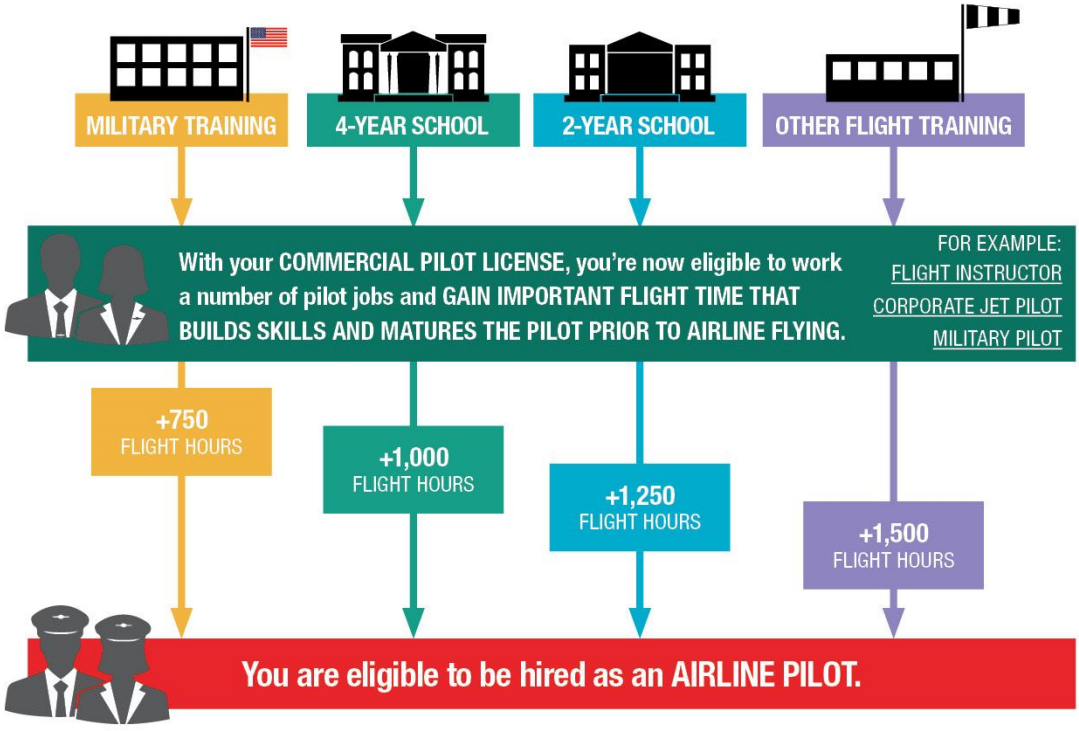

Figure 4 – ATP/R–ATP Eligibility Pathways

From the perspective of pilots, changes in demand for qualified pilots impact selectivity in pursuing employment. Several factors contribute to why some airlines are perceived by pilots as more or less desirable than others. These considerations play a crucial role in a pilot's decision-making process when evaluating job opportunities within the aviation industry:

Base Location: The base location that a pilot will or is likely to be assigned to is an important consideration for pilots, particularly for pilots seeking to avoid or minimize commuting from home to base location. Geographic cost of living differences and length and frequency of trips may also affect the importance of base location to pilots.

Working Conditions and Quality of Life: The working conditions and quality of life significantly impact an airline's desirability to a pilot. Long working hours, frequent shifts, irregular schedules, and limited time for rest or family can make an airline less attractive. Airlines that offer better

work-life balance, predictable schedules, and sufficient time off are more appealing to pilots.

Salary and Benefits: Compensation packages and benefits are essential factors influencing a pilot's decision. Airlines that offer competitive salaries, attractive benefits, such as health insurance, retirement plans, and travel perks for pilots and their families, are more desirable.

Equipment and Technology: The quality and reliability of the aircraft and technological advancements utilized by an airline also matter. Airlines with newer fleets, better-maintained aircraft, and cutting-edge technology tend to be more appealing to pilots, as this influences their working conditions and the overall flying experience.

Peer Network: Pilots may also be influenced by the decisions of friends and acquaintances, and may value employment with an airline if a significant number of their peers are employed there.

Career Progression and Development: Opportunities for career advancement, professional development, and training programs are crucial. Airlines that provide clear pathways for career growth, the chance to upgrade to larger aircraft, and opportunities to move into management or training roles are generally more appealing to pilots.

Company Culture and Morale: The overall company culture, including the relationship between management and employees, the working atmosphere, and the morale among the workforce, greatly affects the desirability of an airline. Positive workplace culture and good morale contribute to a more attractive work environment.

Safety Record and Culture: Safety is a significant concern for pilots. Airlines with a history of safety incidents or accidents might be perceived as less desirable. Additionally, the safety culture within an airline, including its commitment to maintaining high safety standards, implementing effective safety protocols, and fostering an environment where employees feel comfortable raising safety concerns, greatly influences a pilot's choice.

Union Representation and Employee Rights: The presence and effectiveness of pilot unions or associations may impact an airline's desirability. Pilots often seek job security, fair treatment, and

representation in negotiations related to wages, benefits, and working conditions.

Company Stability and Reputation: The financial stability and overall reputation of an airline in the industry and among the public also play a role. Airlines facing financial difficulties, frequent changes in management, or negative publicity might be considered less desirable due to concerns about job security and stability.

Pilots, like any professionals, assess these factors when considering career opportunities within the airline industry. Generational, cultural, and personal differences may affect the priority individual pilots place on these and other factors. In general, airlines that can offer convenient base locations, prioritize safety, offer competitive compensation, provide a positive work environment, and support career advancement are generally more appealing to pilots.

PILOT TRAINING ECOSYSTEM

Individuals seeking to become airline pilots may choose from a variety of training and experience pathways to obtaining an ATP or R–ATP and becoming eligible for employment by a part 121 air carrier.

Military

For several decades in the 20th century after the end of World War II, the U.S. military represented a pathway to employment for significant numbers of air carrier pilots. From a pilot's perspective, military flight training offered an opportunity to acquire high quality flight training and abundant aeronautical experience in high performance aircraft, combined with the opportunity to serve their Country without incurring the financial commitment associated with civilian flight training.[7] Similarly, from the air carrier perspective, military pilots represented uniformly high-quality candidates, given the military's rigorous selection and training standards. U.S. Military pilots undergo an intense, immersive initial training program before becoming rated, with relatively constant continued training throughout their career.

[7] This is not to imply that military pilots do not provide ample value in return for their training. Service in the armed forces involves a variety of personal sacrifices. Additionally, military pilots may incur significant personal expense obtaining civilian certificates and ratings on the basis of their aeronautical experience accumulated during service.

In the 1980s, the attrition of trained pilots leaving military service for private employment became a cause for concern by the Department of Defense (DoD), given the extremely high costs associated with military flight training. In 1989, provisions were signed into law requiring pilot candidates entering flight training to commit to terms of service longer than standard military service commitments, and the various military branches instituted policies accordingly. U.S. Air Force and Army pilots are currently subject to a 10-year active-duty service commitment after receiving their wings, while Naval Aviators are subject to an 8-year commitment. As a result of these and other policies, and reductions in the numbers of pilots recruited and trained by the military over the same time period, former military, reserve and National Guard pilots now make up a smaller percentage of new hire air carrier pilots than before 1989. (Other factors have also affected the proportion of air carrier pilots who received their flight training in the military, including DoD policies other than service commitment requirements and market forces encouraging greater production and hiring of civilian pilots.)

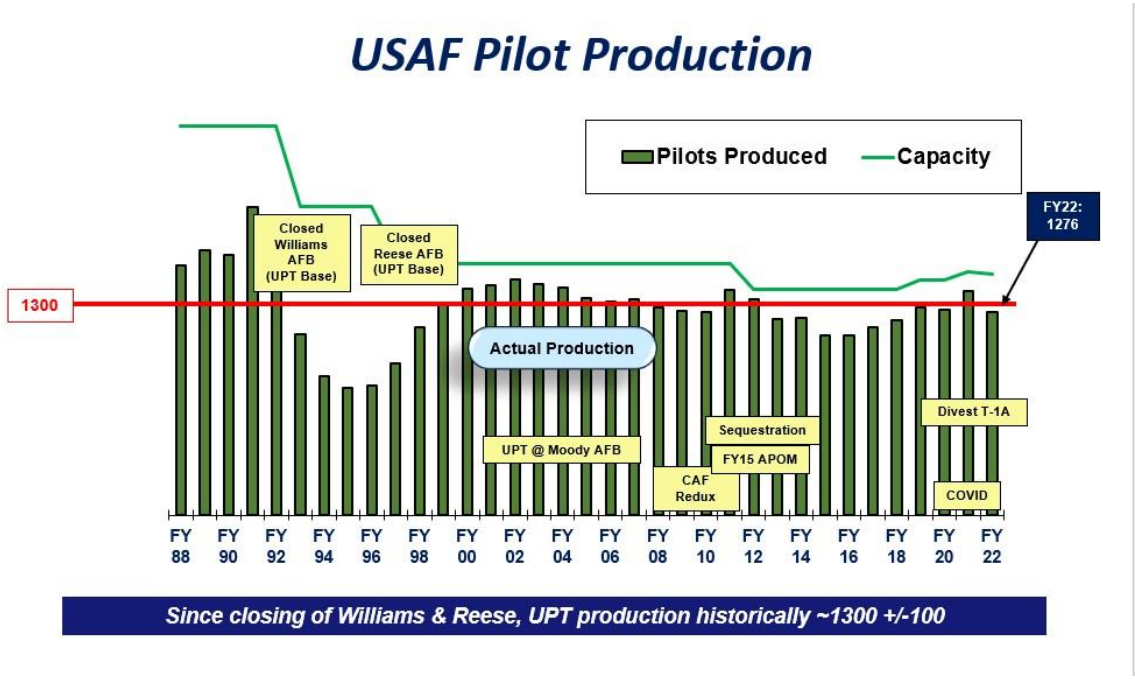

Figure 5 – USAF Pilot Production since 1988

As an example of Armed Forces pilot training, US Air Force (USAF) Pilot Training begins with a fixed-wing Undergraduate Pilot Training (UPT) track or a rotary-

wing only Undergraduate Helicopter Training (UHT) track. The vast majority of USAF pilots go through the fixed-wing track as follows: UPT candidates first learn basic aviation skills through 25 flight hours in the light single-engine DA-20 aircraft during a 6 week Initial Flight Training (IFT) course. Following IFT, fixed-wing student pilots enter phase two of UPT, which consists of 7.5 months in the high-performance T-6A training aircraft where they accomplish approximately 275 academic and ground training hours, 50 immersive training device (ITD) hours, and 50 simulator hours, as well as 100 flight hours.

USAF wings are awarded after the completion of T-6A training, at which time pilots start fulfilling their military service obligation/commitment (currently 10-years). Pilots then enter a third phase of training where they are select to the T-38C (fighter/bomber track) or Air Mobility Fundamentals – Simulator (AMF–S) (heavy/transport track). T-38C training includes approximately 50 ITD hours, 50 simulator hours, and 100 flight hours over 5.5 months. AMF-S tracked pilots accomplish approximately 50 mid-tier device hours and 50 simulator hours during their 3.5 months. Following these foundational training courses, pilots proceed to aircraft specific graduate training across the country before reporting to their first operational unit. These specialized courses can vary from several months for mobility/heavy/transport aircraft to 9 months for fighter aircraft. In Fiscal Year 2023, the USAF Pilot Training enterprise produced just under 1,400 pilots, 95 percent of whom were fixed-wing pilots.

Most active duty military pilots will accumulate aeronautical experience in excess of the requirements for an unrestricted ATP under 14 CFR § 61.159 by the time they complete their active duty service commitment and are able to consider pursuing a career as an airline pilot. Air National Guard and reserve pilots are not required to serve full-time, and may pursue or continue civilian employment concurrent with their service commitment. Some Air National Guard and reserve pilots choose to exceed their part-time service requirement and complete more flight training in the early part of their commitment. These pilots may accumulate experience at a rate comparable to active duty pilots. Pilots who do not accumulate the minimum aeronautical experience for an unrestricted ATP certificate may qualify for issuance of an R–ATP certificate under 14 CFR § 61.160(a).

Military flight training has a number of advantages and disadvantages from the perspective of an air carrier industry seeking new hire pilots. Advantages include a rigorous selection process that ensures only individuals with a high likelihood of success undergo training. This selectivity continues during training, and

individuals that begin training may wash out of flight training and complete their service commitment performing a different role. It is also of note that physical standards for military service and military flight status, including vision standards, are more stringent than the standards for obtaining a First Class medical certificate, which eliminates military flight training as an option for some individuals.

The experience gained training and operating in a highly structured and regulated environment transfers well to the air carrier environment. Military flight training is governed by uncompromising standards of professional behavior and performance, and failure to meet training requirements may have career altering consequences. Further, the fact that active duty pilots are unencumbered by the requirement to hold a separate job allows them to devote their time and energy fully to training.

While military flight training programs provide what is arguably the most intense, high-quality training available, there are differences from civilian training. Depending on the type of aircraft flown, military pilots may have less frequent exposure than civilian pilots to certain facets of aviation relevant to preparation for an airline career. For example, single-seat fighter pilots or those primarily flying helicopters are not necessarily exposed to a multi-crew aircraft environment when flying and may not have opportunities to accrue multi-engine flight experience or encounter significant asymmetric thrust events. Additionally, internal military communications protocols differ from civilian ones, and some military pilots may have limited day-to-day experience operating in the National Airspace System (NAS), particularly Class B airspace. As a result, former military pilots undergoing initial air carrier flight training may require additional emphasis on certain competencies.

Civilian

For pilots other than military pilots, regardless of the training pathway followed, civilian pilot training in preparation for air carrier employment can be divided into two distinct phases: 1) primary training, during which pilots obtain a PPC, followed by a CPC, with instrument and multi-engine ratings, and, for many pilots, a CFI; and 2) accumulation of aeronautical experience during which pilots build time toward the requirements for an ATP or R–ATP certificate.[8] Since

[8] Military flight training departs somewhat from this construct. As an example, Air Force Pilots, undergo Undergraduate Pilot Training (UPT) which consists of Initial Flight Training in light

administering flight instruction is one of the most common ways for pilots to accumulate aeronautical experience, at most aviation universities and flight academies, most instruction of students in the first phase is administered by pilots who have themselves recently completed the first phase and obtained their CFI.

Collegiate Aviation Programs

Collegiate aviation programs incorporate flight training coupled with academic (classroom) training in knowledge areas specified in the pilot certification standards, as well as other aviation-related subjects, with a structured pathway to meeting competency and experiential benchmarks. These schools' flight training organizations and the curricula they use are often approved under 14 CFR part 141.

Collegiate aviation programs' admission standards are set by the college or university with which they are associated, and generally do not include any assessment of aptitude for flight-related skills or competencies or potential for success in flight training.[9] Collegiate programs are generally classified as 2- or 4-year programs based on the number of credit hours of aviation and aviation-related coursework they include. Most colleges and universities offering an aviation degree program have received Letters of Authorization[10] from the FAA under 14 CFR § 61.169. Issuance of a Letter of Authorization indicates the Administrator has authorized that institute to certify graduates as eligible to apply for an R–ATP certificate and signifies recognition of a college or university's coursework as designed to improve and enhance the knowledge of the person seeking a career as a professional pilot.

Graduates of 2-year programs with R–ATP FAA institutional authority receive a minimum of 30 semester hours of aviation-related coursework and graduate with a minimum of a commercial pilot certificate (CPC) with an instrument rating and approximately 200 hours of flight experience. They then continue to build their

aircraft, Primary Flight Training in a T-6A, and Advanced Flight Training in either the Airlift/Tanker, Fighter/Bomber, or Helicopter Track before being assigned to a Formal Training Unit (FTU). Knowledge and skill acquisition is more focused and accelerated in comparison to that of civilian flight students.

[9] Some collegiate aviation degree programs grant preference to applicants who have completed their PPC, which serves as a *de facto* selection process.

[10] Also known as Institutional Authority. The full list of such schools can be found at the following link: https://www.faa.gov/sites/faa.gov/files/pilots/training/atp/Institutional_Authority_List.pdf

flight time via a variety of different methods until they reach the minimums for an R–ATP under 14 CFR § 61.160(c) or an ATP certificate under 14 CFR § 61.159.

Most graduates of a 4-year program at a college or university with Institutional authority receive 60 or more semester hours of FAA-approved aviation-related coursework and graduate with a minimum of a CPC with an instrument rating and approximately 200 hours of flight experience. They then continue to build their flight time via a variety of different methods until they reach the minimums for an R–ATP under 14 CFR § 61.160(b or d) or an ATP certificate under 14 CFR § 61.159.

Paragraph 9 of Advisory Circular 61–139 provides guidance on the subjects and coursework a college or university seeking Institutional Authority should incorporate into its curriculum, as follows:

- Ground and Flight Training for Certificates and Ratings
- Aerodynamics and Aircraft Performance
- Aircraft Systems
- Aviation Human Factors
- Air Traffic Control and Airspace
- Aviation Law and Regulations
- Aviation Weather
- Aviation Safety

A number of factors make aviation college and university degree programs attractive options for aspiring airline pilots. One clear advantage over non-collegiate flight schools is eligibility to obtain an R–ATP. Schools with institutional authority also provide a structured flight training program approved under 14 CFR part 141, with standardized instructor selection and training processes, and standardized documents.

The academic portion of such a degree program also offers numerous advantages, including accreditation, a minimum number of credit hours in required aviation subjects, and non-aviation degree content, contributing to a well-rounded education. Similarly, the experience of attending college offers opportunities for personal growth and acquisition of tacit knowledge that non-university flight schools may not. The opportunity to pursue further education at the graduate level in the form of master's or post-graduate degree programs may also be an attraction. Pilot source studies suggest that pilots with a college

degree, particularly an aviation degree, had fewer non-completions and required fewer additional training events at the air carrier level.[11]

Most mainline carriers have, at times, made an undergraduate degree an employment requirement for flight crewmembers. While most air carriers have recently eliminated this requirement to remove a barrier to the application process and increase the number and diversity of applicants, most pilot candidates at both mainline and regional air carriers hold a bachelor's degree, and degree holders may have a competitive advantage over similarly experienced candidates without a degree.

Additionally, aviation universities also frequently obtain industry feedback and input into the instructional design process,[12] resulting in training that better prepares pilots for a commercial aviation career.[13] Recruiting and hiring relationships between schools and airlines offer mutual benefits for students and industry.

Aviation degree programs are not, however, without some potential disadvantages. Depending on the degree sought, programs may take 2 or 4 years to complete, compared with the 7 to 14 months required to complete training at a non-university flight academy. However, pilots attending 4-year aviation universities typically complete their CPC with multi-engine land and instrument ratings within the first 2 years, and, if they obtain their CFI, are able to begin instructing and building aeronautical experience while they complete their degree program. Financial costs of aviation degree programs are also higher than other pathways, and both financial barriers and selection criteria limit access to such programs.

A factor that can affect quality of instruction at both collegiate aviation programs and flight academies is the availability of experienced instructors. At most aviation universities and flight academies, the majority of flight instructors,

---

[11] See Smith, G.M., NewMyer, D.A, Bjerke, E, Niemczyk, M. & Hamilton, R. A. (2010). Pilot source study: An analysis of pilot backgrounds and subsequent success in US regional airline training programs. *International Journal of Applied Aviation Studies, 10*(1), 73-96 at 83-84.
[12] Maintaining and continuously improving advisory relationships with industry professionals is a requirement for accreditation by the Aviation Accreditation Board International (AABI). AABInternational Accreditation Criteria Manual, Form 201, July 14, 2023, https://www.aabi.aero/wp-content/uploads/2023/11/AABI-201-Accreditation-Criteria-Manual-Rev.-7-14-23.pdf.
[13] A 2010 study found that graduates of aviation degree programs, particularly those graduating from colleges and universities with institutional authority, had fewer non-completions and required fewer extra training events than other pilots at the air carrier level. See Smith, G.M., *et al* at 84.

particularly those providing instruction to new students, are former students building aeronautical experience with the objective of obtaining a job offer from an air carrier. When air carriers are in need of pilots, as is currently the case, flight training providers may lose significant numbers of instructors to airline hiring. This not only limits the number of students the training provider is able to accommodate but may impact continuity of instruction if instructors leave the training provider before the end of a course period.

It is worth noting that legislative, regulatory, or policy changes that expand pilots' ability to obtain R–ATP certificates or otherwise reduce the practical aeronautical experience requirements for flight crewmember employment would likely, while providing an initial temporary boost in pilots qualified to be hired by part 121 air carriers in the short term, have the unintended consequence of reducing the capacity of the flight training community to produce new pilots because flight instructors would be leaving sooner for the airlines and, as a result, fewer would be available to train the next generation of pilots.

Other Flight Training Sources

Individuals seeking to become airline pilots that do not complete flight training in the U.S. Armed Forces and do not attend an aviation college or university with Institutional Authority are not eligible to apply for an R–ATP with less than 1,500 hours flight experience under 14 CFR § 61.160,[14] but may apply for issuance of an unrestricted ATP certificate upon completing the requirements of 14 CFR § 61.159, including accumulating a minimum of 1,500 hours of flight experience. Such individuals may obtain this experience and training toward their various certificates and ratings, including their ATP certificate, from a variety of individuals and entities, as follows:

- *Local Flight Training.* Individuals seeking flight training can, in many areas, obtain it at nearby airports serving the general aviation (GA) community. A database maintained by the Aircraft Owners and Pilots Association indicates there are nearly 2,000 flight schools in the United States, including approximately 1,950 offering part 61 training and 450 offering part 141 training. This may be in the form of individual flight instructors providing instruction for hire on an independent basis, FBOs offering aircraft rental and flight instruction in addition to other GA services, small, dedicated flight schools whose primary business is flight

[14] Individuals may apply for an R–ATP with 1,500 hours of flight experience and 200 hours of cross-country flight time, and otherwise meet the requirements of § 61.159.

training, or flying clubs. Training may be administered in aircraft provided by the training provider (for example, aircraft owned by an FBO or flight school); in aircraft owned or leased by the individual obtaining instruction; or in aircraft rented from a third party.

There is generally no screening based on aptitude or ability, with the only prerequisites being the student's willingness to expend the time and effort necessary to obtain their certificates and ratings and the ability to pay for instruction. Similarly, a local flight training provider will generally have no career pathway relationships with air carriers or other potential employers.

Local flight training is conducted under part 61, with no FAA approved training program or curriculum.[15] Other than the individual instructors providing training, training entities are not certificated, and oral and practical testing for certificates is administered by Designated Pilot Examiners or FAA Aviation Safety Inspectors not employed by the training provider.

Individuals obtaining training from local providers may have objectives other than becoming airline pilots. Some individuals obtain flight training solely as an amateur hobby, or to meet a need for personal transportation in support of other work.[16] Others may be interested in an aviation career other than as an airline pilot. Many individuals who later pursue training at a flight academy or aviation university begin flight training at a local flight school or similar provider as a way of assessing their aptitude and affinity for flying before making a greater financial, time, or career commitment.

There are some advantages to obtaining training from local providers. Training at an FBO or similar provider offers the greatest flexibility in scheduling and pacing of training. This may be attractive to individuals who are pursuing flight training while working, or who do not have sufficient resources available to fund tuition at a flight academy or institution of higher learning. Local flight schools may be the only options available to individuals pursuing flight training while in secondary school. The overall cost of training locally may be lower as well, depending on factors including aircraft age and equipage.

[15] Some local flight training providers provide training under part 141, using FAA-approved curriculums. These organizations may have in-house examining authority.
[16] For some individuals, what begins as hobby or recreational flying may spark interest in pursuing aviation as a profession.

There are several disadvantages to local flight training. Aircraft may be older, and may not be equipped with up to date avionics. Lesson planning may be inconsistent, with no structured or standardized curriculum, and there is generally little or no oversight ensuring quality of training, other than the written and practical certificate examinations. There may be no set standards for selection or training of instructors, and instructors may not be required to undergo continuing training.[17] As a result, students have no assurance that their training will progress efficiently or effectively toward issuance of certificates and ratings.

Local training providers tend to be smaller operations and may lack resources such as a Safety Management System (SMS). Additionally, the lack of oversight and centralized record keeping affects the ability to verify the accuracy of flight training records. Finally, any industry connections or other opportunities for pilots to plan their career path tend to be informal.

- *Flight Academies.* There is no regulatory or other clear distinction between flight academies and local training providers. The term flight academies typically describe career-oriented flight training providers. These organizations tend to be businesses focused on developing professional pilots from zero or near zero time to issuance of a CFI certificate. These organizations may also provide experience building opportunities toward meeting the requirements for an ATP certificate. While flight academies may provide training under part 61 or part 141, they are more likely, when compared with local training providers, to offer part 141 training. A typical practice for flight academies is to train pilots to the point that they hold a commercial pilot certificate with multiengine airplane land and instrument ratings and a CFI, and then hire them as instructors to allow them to build sufficient hours to apply for an ATP certificate. Flight academies may also have alternative career development pathways or partnerships with air carriers. Depending on specific practices or partnerships, flight academies may impose screening or aptitude standards on applicants.

  The following are examples of flight academy program models:
  - Independent flight academy – These are businesses geared toward individuals interested in pursuing a professional pilot career path.

[17] Paradoxically, students obtaining local flight training may have a greater probability of receiving instruction from an experienced flight instructor, as instructors in such settings may be less likely to have a goal of air carrier employment.

Independent flight academies may maintain relationships with airlines and other industry participants, but they are not airline owned or controlled.

Independent flight academies typically have limited screening or aptitude standards; students' ability to attend may be limited only by their access to funds or financing for tuition. Examples of independent flight academies include ATP Flight School and CAE Aviation Academy.

- Airline affiliated flight academy – These organizations are either owned by an air carrier or closely affiliated with an air carrier under a formal contract. Their training programs may incorporate instructional design, procedures and documents specific to the airline for which students are training.

  Applicants to airline affiliated flight academies are pre-screened by the associated air carrier for aptitude or likelihood of successful completion before they are admitted to the training program. Typical screening criteria may include age and citizenship requirements, behavioral evaluations, possession of a First Class medical certificate, background checks, possession of a Student Pilot Certificate, in-person interviews, and aptitude testing. Additionally, students are often contractually committed to employment by the affiliated air carrier upon program completion, or receive financial aid or incentives conditioned upon employment. Examples of airline affiliated flight academies include LIFT Academy, Aviate Academy, Ascend Pilot Academy, and Skyborne Airline Academy.

Flight academies offer some advantages over smaller, local flight training providers. They tend to offer a structured training program, particularly if training is conducted under part 141. Similarly, part 141 providers will have greater regulatory oversight. Flight academies typically have standardized instructor selection criteria and training programs, including continuing or recurrent training, and many have an SMS in place.

Flight academies offer what may be the fastest way for a pilot to build experience from 0 hours to CPC and multi-engine and instrument ratings, and, by extension, from 0 hours to 1,500 hours aeronautical experience. Flight training costs are likely to be lower than at an aviation university, dependent in part on the training fleet maintained by a given academy.

The most significant difference between flight academies and aviation universities is that students do not obtain a college degree contemporaneous with their flight training. Since there is no regulatory distinction between flight academies and local training providers, apart from approval of training programs under part 141, flight academies are governed only by the baseline regulations of 14 CFR parts 61 and 91. As a result, there is no standardization between flight academies with respect to factors such as curricula, instructor hiring and training, and training fleet equipage. Individuals obtaining training at different flight academies may have widely varying experiences, and the quality of training received may similarly differ. In particular, some flight academies may limit their instruction to flight training, with students expected to undertake knowledge training on their own or from other providers, while collegiate aviation programs necessarily involve a synchronous/classroom learning environment. Students also generally have fewer funding/financing options than aviation university students. Finally, depending on the flight academy, there may be little connection to industry, resulting in lack of industry input to training program design and lack of career path planning opportunities.

Organizations that identify themselves as flight schools or flight academies are inconsistent as relates to training and structure. As a result, individuals interested in pursuing flight training have no assurances with respect to organizational stability or the quality and value of training administered. These individuals may face a risk of financial loss if their chosen training provider is ineffective or dishonest, and, if they borrow money to cover the cost of training, lending terms will likely reflect that risk.

A factor that can affect quality of instruction at both collegiate aviation programs and flight academies is the availability of experienced instructors. As noted above, at most aviation universities and flight academies, the majority of flight instructors, particularly those providing instruction to new students, are former students building aeronautical experience with the objective of obtaining a job offer from an air carrier. When air carriers are in need of pilots, flight training providers may lose significant numbers of instructors to airline hiring. This turnover limits the experience of available instructors and creates challenges for training providers seeking to provide adequate customer service and quality instruction. In particular, training providers face challenges filling flight

instructor roles requiring greater experience, such as instructing students seeking their multi-engine rating, or seeking their own flight instructor certificate.

One aviation university reported its flight instructors accumulate sufficient experience to satisfy the requirements for an R–ATP under 14 CFR § 61.160(b) in 13 calendar months, which means a training provider that maintains a staff of 200 instructors is required to hire a total of 900 flight instructors over a 5 year period, assuming 100 percent attrition of pilots attaining the minimum experience needed for an R–ATP certificate. These needs are a consideration in any proposed measures to streamline or augment pathways to obtaining an ATP certificate.

Training Outreach/Youth Flight Training

Many of the flight training options described in this report are available only to adults (individuals aged 18 or older), either because of express minimum age requirements (military flight training, some flight academy requirements), or because the necessity of graduating from secondary school or qualifying for a graduate equivalency degree before study at an institute of higher learning means most starting collegiate aviation university students are at or near at least 18 years of age. Individuals under 18 may pursue local flight training, although a person must be 16 years old to be eligible for a student pilot certificate, which is necessary before solo flight.

Nevertheless, some activities and efforts with a nexus to engaging potential professional pilots exist, and there are opportunities to expand such outreach. Existing initiatives include—

- The majority of collegiate aviation programs providing information to the P3 WG reported engaging in some form of secondary school outreach. A limited number of high schools across the country have dual-enrollment opportunities with select aviation university programs. Under these programs, instructors deliver collegiate level courses on the campuses of high schools, allowing students matriculating at the participating collegiate program to enter with as much as a private pilot rating and receive the associated college credits at a significantly discounted rate.
  Additionally, some secondary schools offer high school level career preparation courses, sometimes in consultation with collegiate

aviation programs that allow students to develop skills and competencies relevant to aviation studies before entering college.

- The Aircraft Owners and Pilots Association (AOPA) has undertaken an initiative to work with high schools around the United States to develop curricula incorporating science, technology, engineering and mathematics (STEM) content aimed at preparing students for advanced education and careers in aviation fields, with pilot and unmanned aircraft system tracks.
- The Civil Air Patrol (CAP) is a public service organization that promotes aviation and encourages youth development through its Aerospace Education and Cadet Programs. The Aerospace Education program promotes aerospace, aviation, and STEM-related careers through curricula and activities. The Cadet Program includes an achievement curriculum focusing on leadership, aerospace, fitness and character.
- The Experimental Aircraft Association's (EAA) Young Eagles program provides opportunities for children between the ages of 8 and 17 to experience flight in a general aviation airplane while educating them about aviation.
- The Youth Access to American Jobs in Aviation Task Force (YIATF) was charged by the FAA to develop and provide independent recommendations and strategies to the FAA Administrator to include a.) identify opportunities to increase diversity in the aviation talent pipeline b.) facilitate and encourage high school students from a diversity of backgrounds and communities in the United States to enroll in and complete career and technical education courses, including science, technology, engineering, and mathematics (STEM), that will prepare them to pursue a course of study related to an aviation career at an institution of higher education, a community college, or trade school; c.) facilitate and encourage these students to enroll in a course of study related to an aviation career, including aviation manufacturing, engineering and maintenance, at an institution of higher education, including a community college or trade school; and d.) identify and develop pathways for students to secure registered apprenticeships, workforce development programs, or careers in the aviation of the United States.

- The Women in Aviation Advisory Board (WIAAB) was charged by the FAA to explore opportunities for encouraging and supporting female students and aviators to pursue a career in aviation, with the objective of promoting organizations and programs that are providing education, training, mentorship, outreach, and recruitment of women for positions in the aviation industry. The WIAAB provided their report outlining a comprehensive plan for strategies the FAA can use to encourage women's involvement in the aviation field, which included 1) Identify industry trends that directly or indirectly encourage or discourage women from pursuing careers in aviation, 2) Coordinate the efforts of airline companies, nonprofit organizations, and aviation and engineering associations to facilitate support for women pursuing careers in aviation. 3) Create opportunities to expand existing scholarship opportunities for women in the aviation industry. 4) Enhance aviation training, mentorship, education, and outreach programs that are exclusive to women.
- The Organization of Black Aerospace Professionals' (OBAP) Aerospace Career Academy initiative provides middle and high school-aged youth exposure to opportunities in aerospace through week-long summer programs.

Airline Employee Career Path Programs

Some air carriers maintain programs intended to provide an opportunity for employees other than flight crewmembers to obtain flight training, with the objective of securing an offer for a flying position. The specific details of such programs vary widely. Characteristics of such programs may include the following:

- Leave of absence
- Retention of employee privileges
- Retention of longevity
- Guaranteed interview

Air carriers with employee career path programs include Alaska Airlines and JetBlue Airways.

EXPERIENCE BUILDING

Whether pilots receive their flight training at an aviation university, a flight academy, or from local training providers, virtually all pilots, with the exception of

military pilots, must find a way to build their flight experience during the period between issuance of their CPC and instrument and multiengine ratings, and the point at which they satisfy the requirements of 14 CFR § 61.159 for an unrestricted ATP certificate or § 61.160 for an R–ATP. Such pilots typically will have accumulated 200 to 250 hours total flight experience by the time they graduate from their respective programs.[18]

Pilots have a number of ways to obtain this experience, most of which involve employment in some capacity as a commercial pilot.[19] The following bullet points describe methods frequently used by pilots to build aeronautical experience:

- *Flight instruction.* Flight instruction is one of the common ways for pilots to build flight time in the United States, especially for those aspiring to become commercial pilots or seeking advanced pilot certifications.[20]

  Flight instruction, often pursued after acquiring a PPC, CPC, and Instrument rating, allows pilots to build flight time while teaching others. This method not only provides flight hours but also reinforces the instructor's own knowledge and skills. Many pilots choose to become certified flight instructors (CFIs) to gain experience and hours, often working at flight schools or training centers.

  Many pilots are hired as instructors at the aviation university or flight academy at which they received their primary training.[21] Others take instruction positions at other training providers. At aviation universities and flight academies, where there is a steady supply of students and high demand for instruction, flight instructors are typically eligible to apply for an R–ATP after 1 to 1.5 years of instructing.

  Flight instruction has advantages and disadvantages as a way of building

[18] The majority of military pilots who complete their active duty service commitment will have flight experience satisfying the requirements of 14 CFR § 61.159, and will be eligible to apply for an unrestricted ATP certificate.
[19] Pilots may, of course, build aeronautical experience by flying rented, leased, or personally owned aircraft, but very few pilots have access to the time and financial resources necessary to do so.
[20] A 2012 pilot source study found that 87 percent of Part 121 regional pilots hired between 2005 and 2011 had a CFI certificate at some point in their career.
[21] A survey of aviation universities showed that 2/3 of respondents hire more than 50 percent of flight students as instructors, and 20 percent of respondents hire more than 90 percent of flight students as instructors. See Appendix at A-36.

aeronautical experience. The primary advantages are related to how well flight instruction prepares a pilot for the demands of line flight operations. Teaching necessarily involves continued development of the instructor's own skills and knowledge, and develops the instructor's understanding of the significance of a variety of factors.[22] Feedback from the air carrier industry is that early career pilots with a flight instruction background are more likely to be successful in initial flight training at a regional air carrier.[23] Further, as a practical matter, during flight instruction, the aircraft is almost constantly in a critical phase of flight, potentially instilling habits of complete engagement. Instructing also builds decision making and command skills. The fact that a flight instructor bears responsibility for the safety of students cannot be overlooked. There is currently high demand for flight training and high instructor turnover at flight training organizations as instructors are hired by operators; most flight instructors can find work easily. Flight instruction presents opportunities to build experience relatively quickly, and, depending on the setting, flight instructors may be able to gain further experience flying in part 91 or part 135 flight operations concurrent with their instructing.

There are limited disadvantages to flight instruction as a method of building aeronautical experience. The work of instructing is highly demanding, and typically involves a challenging operational cadence. Additionally, the vast majority of fixed-wing flight instruction is administered in light single-engine piston powered airplanes, and instructors providing primary flight training typically do not accumulate significant multiengine, multi-crew or turbine engine time.[24] Further, for the majority of time spent instructing, the instructor is not manipulating the

[22] A comparison of the different forms of learning shows that teaching others facilitates retention of knowledge more effectively than any other method. See *Pushing Your Teaching Down the Learning Pyramid*, Science Outside, May 18, 2020, https://www.scienceoutside.org/post/pushing-your-teaching-down-the-learning-pyramid.

[23] The 2010 Pilot Source Study found that pilots with flight instruction experience required fewer extra training events and had fewer non-completions than pilots who were not flight instructors. See Smith, G.M., *et al* at 80. It is, however, noted that such studies do not take into account how much instruction pilots with a CFI have administered. Many pilots fill their experience gap with a combination of flight instructing and other flying.

[24] While appreciable demand for multi-engine training exists, current hiring standards at most air carriers do not call for more than 25 hours of multi-engine time. As a result, most pilots do not have significant incentive to expend the time, effort, and expense to obtain a multi-engine rating on their flight instructor certificate (MEI). Some training organizations have incentivized instructors to obtain their MEI by subsidizing the associated cost.

flight controls and honing stick and rudder flight skills. However, the necessity for the instructor to monitor the student can build their situational awareness and scanning skills with respect to both the environment outside the aircraft and the instruments inside the aircraft, making them more effective when they do manipulate the flight controls. It also builds their skills in communicating with ATC. In addition, observing and correcting errors made by students is a powerful learning tool for the instructors themselves, not just the students, potentially preventing the instructor from making the same mistakes themselves at a later point in their career.

- *Non-Flight Instruction Part 91 operations*. Pilots holding a CPC and appropriate ratings can build flight experience flying for compensation in operations conducted under part 91. Part 91 covers an extremely broad range of operations, from operation of single engine piston powered aircraft in non-transport, service-oriented operations such as aerial survey, banner towing, and traffic reporting to multi-crew oriented operations involving multiengine turbine powered aircraft in corporate and business GA operations.

  Because part 91 operations vary so widely, it is difficult to make broad statements comparing them to other methods of accumulating aeronautical experience. In general, part 91 flying, particularly simpler service-oriented operations, can offer attractive options because no certification other than a commercial pilot certificate and appropriate category, class, and (when required) type ratings are required under the applicable regulations, although operators may imposed higher standards, often to satisfy insurance requirements. In many cases, employers will ensure pilots have any needed training. It is also of note that many part 91 operations involve flying at less congested airports, which minimizes taxi and wait times and maximizes actual flying time.

  Some part 91 flying may be less attractive, depending on the operation. In general, part 91 pilot positions are limited, and may not provide opportunities to build aeronautical experience as quickly as other options. Service-oriented operations often involve single pilot flight in single-engine piston powered airplanes, and do not offer significant opportunities to build

CRM experience.[25] Part 91 flying may also offer less frequent opportunities to gain experience in Class B airspace or other more demanding air traffic environments.

Part 91 operations may also have less stringent training and safety oversight than, for example, operations under 14 CFR part 135 (part 135 operations). Many components such as SMS and a continuing training program are largely voluntary under part 91. Nevertheless, some part 91 operations, particularly larger operations, maintain SMS programs or training programs similar to those in place at part 135 operations.

Some part 91 operations (particularly corporate flight department) may offer a more professional experience, with dispatched operations in multiengine turbine powered multi-crew aircraft. Such positions may require experience approaching or exceeding ATP qualifications, making them unsuitable for pilots seeking to build aeronautical experience. They may also not offer opportunities to build time quickly, with a relatively low operational cadence. Some part 91 flying positions, while allowing pilots to log time, may, by their nature, not provide as meaningful experience as other options.[26]

- *Part 91K operations.* Subpart K of 14 CFR part 91 (Part 91K) regulates fractional ownership programs, under which multiple owners have fractional interests in multiple aircraft, which are managed and maintained by a program manager. Fractional ownership programs are typically managed an operated in a fashion similar to a corporate flight department or small air carrier, with organized flightcrew member training, crew and aircraft scheduling, and recordkeeping functions.

  Operations conducted under part 91, Subpart K (Part 91K operations) may offer opportunities for some pilots to accumulate aeronautical experience prior to employment at an air carrier. The advantages of Part 91K operations as a way to accumulate experience are similar to those of part 135 operations. From the pilots' standpoint, Part 91K operations provide an airline-like experience and allow them to accumulate flight hours rapidly

[25] Conversely, single pilot operations offer the opportunity to be the sole decision maker in the cockpit, and all flight experience so obtained is as pilot in command.
[26] For example, in some operations, the aircraft used may only require a single pilot, but insurance coverage requirements dictate the presence of a second pilot.

during both flights carrying passengers or cargo and ferry operations. Similarly, a disadvantage of flying in Part 91K operations is quality of life, with demanding and unpredictable flight schedules. Additionally, the aeronautical experience requirements for flying in Part 91K operations are more stringent than those for part 135 operations. PICs must have a minimum of 1,500 hours total time, and for operations involving multi-engine turbine-powered fixed-wing aircraft, must hold an ATP certificate, and SICs must have a minimum of 500 hours total time.[27] As a result, employment as a Part 91K pilot is often viewed as an alternative to air carrier employment, and Part 91K operations are only a viable way to build experience for pilots seeking employment at air carriers with hiring standards significantly in excess of the minimum ATP requirements, such as major airlines. An example of a 91K operation is NetJets.

- *Air National Guard/Reserves.* Pilots in the Air National Guard (ANG) or reserves accumulate aeronautical experience during initial and continued training. The rate at which ANG and reserve pilots accumulate flight time is subject to a number of factors, but typical training for such pilots in recent years has involved slightly more than 10 flight hours per month after award of wings.[28] Part time ANG or reserve pilots generally do not accumulate military flight time at the same rate, but often accumulate civilian flight experience when not on military orders.
- *Part 135 operations*. 14 CFR part 135 (part 135) regulates the conduct of on-demand and commuter air transport operations, which are airline-like operations involving rotorcraft or smaller airplanes. Part 135 represents a way for pilots to obtain experience in commercial air transport flight operations.

  The primary advantage of part 135 operations as a way to build aeronautical experience is the opportunity to fly in multi-crew oriented operations carrying passengers or cargo. This may also involve flying multiengine or turbine powered airplanes. Additionally, pilots may be able, subject to applicable duty time limitations, to obtain additional experience by instructing or flying in part 91 operations concurrent with their part 135

[27] 14 CFR § 91.1053(a)(1).
[28] See *Air Force Has to 'Get Our House in Order' on Pilot Retention Red Tape, Slife Says*, John A. Tirpak, Air & Space Forces Magazine, February 22, 2023 (https://www.airandspaceforces.com/air-force-has-to-get-our-house-in-order-on-pilot-retention-red-tape-slife-says/).

flying.

One clear benefit of part 135 flying, from the standpoint of a pilot accumulating aeronautical experience, is the availability of part 135 second-in-command professional development programs. If a part 135 operator has obtained approval of such a program, a pilot acting as second-in-command may, under 14 CFR § 61.159, log the flight time toward aeronautical experience required for an ATP certificate, even if a second pilot is not required under the type certification of the aircraft flown or the regulations under which the flight is being conducted.

A potential challenge associated with part 135 flying is quality of life. Many operations are on-demand, and pilots may be called upon to fly on short notice. Some operators are addressing such concerns by building guaranteed time off into pilots' flight schedules. The market for part 135 flying positions can also be difficult to navigate. Many part 135 operators are small and may not have the ability to effectively advertise positions and find suitable candidates.

The various ways of obtaining experience should not be considered to be equivalent. Each offers different opportunities for gaining experience and tacit knowledge. For example, multiple crewmember operations present opportunities for pilots to receive mentoring, gain an understanding of CRM, and learn command and leadership skills. Similarly, operations allowing pilots to teach or mentor other pilots enhance CRM, command, and leadership skills. The following types of operations and environments will better prepare pilots for air carrier operations:

- Operations that provide opportunities for decision making experience;
- Point to point operations (as opposed to operations limited to local flight to and from a given airport);
- Operational factors and aircraft equipage that expose pilots to the types of avionics and flight deck automation used in airline operations;
- Operations offering opportunities to gain experience at high density airports or in Class B airspace;
- Operations involving multiengine or turbine powered aircraft, particularly high altitude operations;
- Operations that expose pilots to weather conditions such as convective conditions, conditions conducive to icing, or turbulence; and
- Operations that expose pilots to de-icing or anti-icing operations.

PILOT SOURCING INITIATIVES

The sections above describe the types of training and time building opportunities generally available to pilots. As referenced in the discussions above on aviation universities and, in some cases, flight academies, a number of airlines have developed programs to establish relationships with pilots in training in hopes of hiring them when they have attained appropriate levels of experience and certification. Each such program has its own unique characteristics, but they can be broadly categorized as follows.

- Cadet Programs – Cadet programs allow air carriers and students to build relationships early in students' flight training. Cadet programs are non-binding for students, but typically offer incentives such as: an early interview or conditional job offer, with priority, upon attaining the requisite certificates and aeronautical experience; early seniority placement; a human resources contact; mentoring; access to cadet-specific events; and eligibility for scholarships. Advanced students may have part-time employment status as brand representatives and receive a stipend and other benefits. Examples of cadet programs include Republic Airways' RJet Cadet Program and RJet Ambassador Program, SkyWest Airlines' Pilot Pathway Program, and JetBlue Airways' Gateway Select program.
- Pilot Development Programs – Pilot development programs are similar to cadet programs, but with a stronger expectation of future employment. Students in pilot development programs may receive financial assistance in the form of stipends or funding of flight training. Such programs may be geared toward increasing diversity, with selection criteria based on minority class status. Examples of pilot development programs include Alaska Airlines' Ascend Pilot Development and Ascend True North programs.
- Airline Flight Academies – Airline flight academies are programs administered by specific air carriers to train candidates with little or no aeronautical experience, with a contemplated end state of employment with the air carrier. Training is typically contracted to one or more pilot schools, which may or may not exclusively train the partner air carrier's candidates. Training may incorporate procedures, document formats, and terminology specific to the partner air carrier's operations, and candidates are typically mentored by line pilots from the partner air carrier.

  Once pilots complete the first phase of their training (that is, they obtain their CPC with instrument and multi-engine ratings), airline flight academy

programs may assist them in accruing aeronautical experience by hiring the students as flight instructors or by placing them with partner part 135 operators.

Acceptance to an airline flight academy program may include a conditional job offer from the partner air carrier, and candidates may be contractually committed to employment with that air carrier. Financial assistance provided to accepted candidates may include discounted training costs, loans at favorable terms (even for candidates lacking a positive credit history), stipends, scholarships, or tuition reimbursement.

Examples of airline flight academy programs include Alaska Airlines' Ascend Pilot Academy, Republic Airways' LIFT Academy, United Airlines' Aviate Academy, and Delta Air Lines' Propel Flight Academy.

- Military Feeder Initiatives. The Armed Forces do not maintain pilot sourcing initiatives analogous to air carrier cadet and pilot development programs, but do engage in community and youth outreach efforts intended, in part to spark interest in aviation and military service.
    - Civil Air Patrol – The Civil Air Patrol (CAP) is a non-profit aviation-minded volunteer organization that serves as a civilian auxiliary to the USAF. CAP membership consists of cadets ranging from 12 to 21 years of age and senior members 18 years of age and up. Among the pursuits of the CAP are personal development of cadets, including aviation education and training.
    - Reserve Officer Training Corps/Naval Reserve Officer Training Corps – ROTC and NROTC refer, collectively, to college and university based programs for training commissioned officers of the United Stated Armed Forces. ROTC/NROTC students may receive scholarship aid in return for an active-duty service obligation upon completion of academic degree training. While ROTC/NROTC scholarships may not be used for collegiate flight training, summer programs may include exposure to aviation operations and flight training.
    - Junior ROTC – Junior ROTC (JROTC) is a Federal program sponsored by the United States Armed Forces in secondary schools to foster personal development of youth. JROTC Flight Academy summer programs, conducted in cooperation with

selected colleges and universities, provide opportunities for students to earn their PPC.

QUALITY AND CAPACITY OF TRAINING

Incorporation of additional elements into aviation training program selection processes and curricula, such as encouraging diversity and including professional development training to develop core competencies and soft skills can help to optimize production of quality pilots.

Some characteristics of existing flight training programs at aviation colleges and universities and flight academies present obstacles to effective training, including—

- Quality of Training

  As the air carrier industry has evolved, transport category aircraft and their associated systems, air carrier procedures, the NAS, and air traffic control procedures have become increasingly sophisticated. While the replacement of Pilot Training Standards with the Airman Certification Standards and the promulgation of new certification requirements such as the ATP CTP represent efforts to address these changes, they are not comprehensive. Similarly, collegiate aviation degree programs, while including significant content beyond that specified by the certification requirements of 14 CFR part 61, do not address all areas relevant to air carrier operations.

- Training Capacity
  - *Aircraft.* At many institutions, fleet size and makeup and aircraft availability are limiting factors affecting training capacity, with class sizes limited accordingly. Institutions report high costs and difficulty in obtaining suitable aircraft.
  - *Instructors.* Flight training providers must constantly hire and upgrade instructors to maintain a workforce sufficient to instruct students, and face challenges in retaining sufficient numbers of multi-engine instructors. This is primarily because, given current hiring trends at airlines and other employers, CFIs only instruct for approximately 1.25 years after receiving their CPC and instrument

and MEL ratings.[29] A follow-on effect of this is that few pilots instruct long enough to be able to serve as instructors for other pilots seeking their CFI certificate.[30]

- *Designated Pilot Examiners.* Where flight training providers do not have in-house examining authority, the availability and backlog of DPEs can delay students from completing their oral and practical exams for certificates and ratings.

  Typically, pilots continue to train and build experience during any such delays, however if there are significant periods of dormancy between completing training and undergoing examination pilots may need additional refresher training or risk failure. This additional training increases the overall cost of training for such pilots.[31]

  In June 2019, in compliance with provisions of the FAA Reauthorization Act of 2018 (P.L. 115–254), the Aviation Rulemaking Advisory Committee (ARAC) formed the Designated Pilot Examiner Reforms Working Group (DPERWG) and tasked it with developing recommendations to address a growing public need for additional pilot examiners by removing process-related barriers and reducing inefficiencies. The DPERWG issued its report in June 2021.

- *Infrastructure.* Larger flight training providers experience infrastructure-related limitations such as saturation of runway/airport capacity, unavailability of sufficient airspace to conduct training, or longer outbound and inbound transit times to reach training areas.

[29] A recent poll of instructors at an aviation university showed that a significant percentage would not have pursued their CFI certificate if they could have gone directly to air carrier employment with less than 500 hours.
[30] Under 14 CFR § 61.195(h), to serve as a flight instructor for an airplane CFI course approved under 14 CFR part 141, an instructor must hold a CFI for at least 24 months and given at least 200 hours of flight training, or have trained and endorsed at least five certificate applicants with at least an 80 percent first time pass rate and have given at least 400 hours of flight training. It is notable that instructors at institutions administering training under part 141 with examining authority are not consistently afforded the pass rate option under existing interpretations of applicable regulations and guidance.
[31] The baseline costs associated with undergoing examination by a DPE are not negligible. Pilots taking CPC examinations with DPEs report fees of $900 in addition to the cost of aircraft rental.

Similarly, students training at busier airports or in high traffic density airspace may face challenges because air traffic control is unable or unwilling to accommodate requests, such as for specific instrument approaches. Noise abatement limitations may also impact students ability to train by limiting the hours during which certain operations may take place.

- *International Students.* An ancillary issue when discussing limits on training capacity is the fact that a significant percentage of students at some training providers are international students (permanent residents of a country other than the U.S.).[32] Such students come to the U.S. to obtain the high quality of training available but will most likely seek employment outside the U.S. after completing training. Under current circumstances, when there is high demand for appropriately experienced and certificated pilots, there is likewise high demand and competition for the training resources described above. Capacity devoted to training international students is not available to train U.S. residents.

COST OF TRAINING AND FINANCE

For an individual with the requisite aptitude and interest to pursue a career as a professional pilot, the greatest obstacles to achieving that goal may be the cost of flight training, the lack of easy access to financing, and the inability to make repayment on financing immediately after completing training.

The student loan debt crisis in the United States is a pressing issue that has been gaining increasing attention over the past decade. As of 2021, the total student loan debt in the U.S. stands at a staggering $1.7 trillion, with an average debt of $37,584 per borrower. This escalating debt burden is not only a financial strain on individuals but also a significant drag on the overall economy. However, the problem is not just the amount of debt students are accumulating; it's also the lack of availability of affordable education and financial aid options.

The rising cost of education has outpaced inflation and wage growth, making it increasingly difficult for students and families to afford college without taking on substantial debt. The lack of availability of affordable education options is a

[32] Approximately 33 percent of institutions responding to a survey of aviation universities indicated that at least 5 to 10 percent of their flight students are international students, with one institution indicating 20 to 30 percent and one institution indicating 40 to 50 percent.

significant contributor to the student loan debt crisis. Many students have no choice but to take on loans to cover the cost of their education, often at high interest rates.

Moreover, the availability of financial aid has not kept pace with the rising cost of education. While federal student aid programs such as Pell Grants and subsidized loans can help offset some of the costs, they often fall short of covering the full cost of attendance. Furthermore, eligibility for these programs is based on financial need, leaving many middle-income families in a gap where they earn too much to qualify for need-based aid but not enough to afford college without loans.

The lack of availability of affordable education and financial aid options is a complex issue with no easy solutions. However, several potential strategies could help alleviate the burden. These include increasing federal and state funding for higher education, expanding eligibility for need-based aid, implementing tuition-free or debt-free college programs, and promoting alternative education pathways such as apprenticeships and vocational training.

The student loan debt crisis is a multifaceted problem that requires a comprehensive approach. Addressing the lack of availability of affordable education and financial aid options is a critical component of any solution. As a society, we must prioritize making higher education accessible and affordable for all, not just a privilege for the few. Only then can we begin to alleviate the burden of student loan debt and ensure that all individuals have the opportunity to achieve their educational and career goals.

Cost of Training

Pursuing a career in aviation can be a costly endeavor, with expenses ranging from flight training to university degrees. The cost of training and time required to achieve certain training milestones differs, depending on the training pathway used. The following are typical times and costs to obtain a CPC with MEL and instrument ratings and a CFI and CFII or MEI from zero time:

- *Local Flight Training/Flight School*
  Time and cost vary depending on a variety of factors including pace of training; whether the student rents, leases, or owns the aircraft used; geographical location; and local training environment. Typical costs for obtaining a CPC with a multi-engine rating and a CFI range from $75,000 to $100,000.
- *Flight Academy*
  There is some variance in training costs between flight academies, and

total costs are dependent on the specific certificates and ratings obtained, and the amount of incompletions or extra training required. Because of the scheduled, course-oriented nature of flight academy training, the time to obtain certificates and the time in which training expenses are incurred are condensed when compared with local flight training. Typical time to obtain a CPC with a multi-engine rating and a CFI ranges from 7 to 14 months, and typical costs range from $90,000 to $110,000.

- *Collegiate Aviation*
  The costs of obtaining an undergraduate degree as part of a collegiate aviation program including flight training vary, based on a variety of factors, including the educational institution in question, whether it is public or private, its geographic location, and the certificates and ratings obtained. The costs of participating in such a program include those generally associated with obtaining an undergraduate degree (tuition and fees, housing and food, books and supplies, transportation, and miscellaneous and personal expenses), as well as the costs associated with flight training, which tend to be comparable to the costs at flight academies.[33] It should be noted that once flight students at 4-year college/university programs receive their CFI (often after approximately 2 years of enrollment), they often begin to instruct incoming students while completing their degree program. This provides an opportunity to earn income to offset expenses and possible reduce borrowing requirements.

  The following are typical costs of tuition and flight training (excluding room and board) at various types of educational institutions offering aviation degree programs:[34]
  - *2-year Aviation College/University (Private) – $110,000 to $120,000*
  - *2-year Aviation College/University (Public) – $90,000 to $110,000.*
  - *4-year Aviation College/University (Private) – $220,000 to $260,000*
  - 4-year Aviation College/University (Public) – *$110,000 to $200,000*
- *Military Flight Training*
  As described above, using the example of USAF Pilot Training, fixed-wing USAF pilots complete Initial Flight Training and Undergraduate Pilot Training before assignment to a fighter/bomber track or heavy/transport track. The skills and competencies accumulated through this level of

[33] There may be outliers able to provide training at lower cost (ex. Liberty University, which conducts training at satellite locations to reduce costs). Similarly, some students borrow in excess of the stated amounts while obtaining their degree and flight training.
[34] See https://www.flyingmag.com/flight-schools/.

training are comparable to those accumulated in obtaining a CPC. A 2019 RAND Corporation Report assessed the cost of training a pilot through IFT and UPT to be approximately $389,000.[35]

Sources of Funding

Individuals interested in a career as an airline pilot face limited options in paying for the cost of training. The availability and cost of funding for flight training depends on a number of factors, including the type of flight training, ancillary expenses, the student's income or access to personal savings, the student's (and student's parents') borrowing power and existing debt. Several financing options are available to help students manage these costs, including aviation-specific student loans. The following are the primary means by which pilots finance training costs:

- *Personal wealth/income.* Individuals may, of course, use personal wealth/savings or disposable income to cover or offset the costs associated with flight training. Only a limited number of pilots possessing the necessary aptitude for a career in aviation have access to personal savings or income sufficient to fully fund the cost of flight training.

  One item of note with respect to personal savings is the availability of tax-advantaged qualified tuition plans (529 plans) under Section 529 of the Internal Revenue Code (26 U.S.C. § 529), which allow individuals or their parents/caregivers to save for their future higher education expenses. Savings in 529 plans are most often used to fund or offset costs of attending institutions of higher learning, such as tuition, fees, books and supplies, and living expenses. Past legislation has expanded allowable uses of 529 plan funds to include vocational training and apprenticeship programs, but to date, flight training has not been an eligible expenditure.

- *Military.* Pilots in the U.S. Armed Forces are not required to pay for the cost of their flight training, making military flight training an attractive option from a cost perspective. As noted elsewhere in this report, military pilots generally face a lengthy active duty service commitment before they

[35] See Mattock, Asch, Hosek, & Boito, *The Relative Cost-Effectiveness of Retaining Versus Accessing Air Force Pilots*, RAND Corporation (2019), p. 16. This information is provided solely for informative purposes. As stated, IFT and UPT cannot be compared directly with civilian flight training, and, unlike civilian flight training, recipients of military flight training are not required to fund the cost of training.

can seek airline employment, and some individuals may be physically ineligible to fly in the military.

- *Federal Financial Aid.* Federal financial aid describes a variety of programs authorized under Title IV of the Higher Education Act of 1965 (P.L. 89–329), as amended. Federal financial aid is an attractive but limited option for those qualifying. It is important to note two key limitations with respect to Federal financial aid: 1) Only individuals enrolled in studies at accredited institutions of higher learning are eligible for Federal financial aid; and 2) Students may obtain Federal financial aid to cover or offset the costs of tuition, housing, books and supplies, and fees such as parking and lab fees, but flight training costs are not eligible for Federal financial aid assistance. As a result, while Federal financial aid may help students pursuing collegiate aviation degrees to fund the total cost of their education and flight training, other funding sources will also be required.

  Students seeking Federal financial aid must complete the Free Application for Federal Student Aid (FAFSA). The U.S. Department of Education uses information on the FAFSA to determine students' eligibility for aid. Federal aid can be in the form of outright grants, work study programs, or loans or loan guarantees.

  - *Grants.* Undergraduate students are generally eligible for two types of Federal grants, Pell Grants and Federal Supplemental Educational Opportunity Grants (FSEOG). Both are needs-based grants, and take into account factors such as expected family contribution, cost of attendance, enrollment status, and other aid available. A limit on the amount a student may obtain through a Pell Grant is set each year. The maximum for the 2023-24 academic year is $7,395. The maximum amount a student may obtain through an FSEOG is $4,000.
  - *Federal Work Study.* The Federal Work Study program provides part-time jobs for students with financial need, allowing them to earn money to help pay education expenses. The program encourages community service work and work related to the student's course of study. How much students can earn depends in part on need and the educational institution's funding level.

- *Direct Loans/guarantees.* Direct Federal student loans offer an attractive funding source for students who are not able to cover educational expenses through personal wealth and income and the other sources described here. The interest rates on Direct Federal student loans are generally more attractive than those offered by private lenders. The current annual percentage rate on new Federal student loans is 5.5 percent.

  Direct Federal student loans are either subsidized or unsubsidized. The U.S. Department of Education pays the interest on Direct Subsidized loans while the student remains in school, during a 6 month grace period after the student leaves school, and during deferment periods. Students are not required to make payments on Direct Unsubsidized loans while they remain in school or during deferment or forbearance periods, but they remain responsible for the accrued interest, which may be capitalized and added to their loan principle.

  The amount of Direct Loans a student can borrow is determined based on cost of attendance, need, and other financial aid available. The amount loaned may not exceed the student's financial need, and the total amount of subsidized and unsubsidized loans are subject to annual and aggregate caps, the amounts of which are dependent on whether the student is dependent on parental support or independent. (A student is considered independent if the student's parents are not eligible for a Direct PLUS Loan.)

  The table below shows the total amount of Direct Federal lending a student may take out while obtaining an undergraduate degree.

Table 3 – Direct Federal Lending Limits

Year	Subsidized Loan Limit	Total Direct Loan Limit (Dependent Student)	Total Direct Loan Limit (Independent Student)
1st Year (1-30 credit hours)	$3,500	$5,500	$9,500
2nd Year (31-60 credit hours)	$4,500	$6,500	$10,500

3rd Year and beyond (61 or more credit hours)	$5,500	$7,500	$12,500
Cumulative limits for 4 years	$19,000	$27,000	$45,000
Aggregate Loan Limits	$23,000	$31,000	$57,500

As stated above, Direct Federal lending is an attractive source of funding, but does have limitations, the largest of which is that the cost of flight training cannot be used to justify lending. Additionally, individuals obtaining Federal loans must begin repayment 6 months after completion of their degree or training program. Because pilots are often continuing to accumulate aeronautical experience after graduation, they may lack sufficient income to cover repayment obligations and other costs of living.

- *Parent (PLUS) Loans.* Direct PLUS Loans are available to parents of students. To be eligible, parents may not have an adverse credit history. The maximum loan amount is the cost of attendance (which does not include flight training costs), minus any other financial aid the student is receiving. The interest rate on PLUS loans is the Federal Bond rate plus 4.5 percent, which currently equates to 8.04 percent.[36]

- *Veterans' Benefits*. Individuals who have served in the U.S. Armed Forces and their family members may be eligible for education benefits under one or more GI Bill programs authorized under Title 38 of the United States Code and administered by the U.S. Department of Veterans Affairs (VA). Eligible individuals can use both VA benefits and Title IV Federal financial aid. Unlike financial aid, eligibility for VA benefits is not limited to attendance at accredited institutions of higher learning, and some benefits can be used to cover or offset flight training expenses, in addition to tuition and other fees.

  - *Benefits for Veterans.* Veterans can obtain benefits in the form of payments toward tuition and other fees under several GI Bill and

[36] To be eligible to use VA benefits for flight training, veterans or dependents must have a private pilot certificate and have second-class medical certificate or a first-class medical certificate if pursuing an ATP certificate.

other programs, as follows (Chapter numbers refer to Chapters of Title 38.):

- *Post-9/11 GI Bill (Chapter 33).* This program provides assistance to eligible veterans enrolled in college or attending trade or vocational schools for up to 36 months of enrollment. For veterans attending public colleges and universities, benefits cover the full cost of tuition and mandatory fees, including flight fees if part of a degree program. For veterans attending private colleges and universities, benefits are capped at $27,120 for the 2023-2024 academic year and may not be used to cover or offset flight training fees. Benefits may also be used to pay up to $15,497 of net tuition and mandatory fees for non-degree flight training in lieu of degree program assistance. Post-9/11 GI Bill benefits also include housing assistance, a stipend for books and supplies, and relocation assistance. Post-9/11 GI Bill benefits may be transferable to a service member's spouse and children. (See Spouse and Dependent Benefits, below.)
- *Montgomery GI Bill (Chapters 38 and 1606).* This program provides a monthly stipend to eligible veterans and members of the armed forces reserves enrolled in college or attending trade and vocational schools for up to 36 months of enrollment. The amount of the benefit depends on whether the veteran is enrolled full- or part-time, and length of active duty service. Benefits may be used to cover tuition and mandatory fees (not including flight fees) at a college or university. The maximum monthly tuition and fee benefit for the 2023-2024 fiscal year is $2,358 per month for veterans and $466 per month for reservists. Benefits may also be used to pay up to 60 percent of approved costs of flight training in a non-degree program in lieu of tuition and fee assistance. Veterans must elect to be eligible for either Post-9/11 or Montgomery GI Bill benefits and may not be eligible for both.
- *Veteran Readiness and Employment (Chapter 31).* This program covers educational and vocational training costs for veterans with a service-connected disability rating of at least

10 percent who did not receive a dishonorable discharge, as long as the disability does not preclude the veteran from doing the job they are training for. The program covers tuition, books, and fees, including flight fees.

- *Yellow Ribbon Program.* Under the Yellow Ribbon program, certain colleges and universities enter into agreements with VA to subsidize the cost of attendance for veterans and dependents eligible for transferred VA benefits. Under the program, if an eligible student's other benefits do not cover all tuition and fees, and the college or university has not already enrolled the maximum number of students specified in its agreement with VA for the current academic period, they student may apply to participate in the Yellow Ribbon Program. The college or university's agreement with VA will specify the eligibility requirements and amount(s) it provides to approved students. Any amounts the school provides to students under the program are matched by VA, up to the total eligible tuition and fees.
- *Spouse and Dependent Benefits.* As noted above, Post-9/11 GI Bill benefits may be transferable to dependent children. In addition, there are specific benefits available to spouses and dependent children of veterans and service members who have died or are permanently disabled.
    - *Post-9/11 GI Bill Benefits*. A service member who has completed at least 6 years of service and has agreed to add 4 more years of service may elect to transfer his or her Post-9/11 GI Bill benefits to a dependent family member (spouse or dependent child), subject to the conditions and limitations described above. Children must be at least 18 years of age and have completed high school or secondary education before using transferred benefits, and must use them before turning 26 years of age.
    - *Survivors' and Dependents' Educational Assistance (DEA) (Chapter 35).* DEA benefits are available to spouses and children of veterans or service members

who die in the line of duty, have a permanent complete disability related to their service, or are captured or forcibly detained in the line of duty, or missing in action for more than 90 days. To be eligible, beneficiaries must be at least 18 years of age and have completed high school or secondary education. This program provides a monthly stipend to eligible beneficiaries enrolled in college or attending trade and vocational schools for up to 36 months of enrollment. The amount of the benefit depends on whether the beneficiary is enrolled full- or part-time. Benefits may be used to cover tuition and mandatory fees (not including flight fees) at a college or university. The maximum monthly tuition and fee benefit for the 2023-2024 fiscal year is $1,488 per month. Depending on eligibility, spouses must use available DEA benefits within 10 or 20 years of becoming eligible. Children must use DEA benefits before reaching 26 years of age.

The following table summarizes the various kinds of aid available to veterans and their dependents through the VA:

Table 4 – Available VA Education/Training Benefits

	GI Bill				Spouse/Survivor	
	Post-9/11	**Montgomery**	**VR&E**	**Yellow Ribbon**	**Post-9/11 GI Bill**	**DEA**
Basic Eligibility (other circumstances may qualify)	90 Days Active Duty	2 yrs Active Duty or 6 yrs Reserves	10% Disability	3 yrs Active Duty	Spouse or Child between 18 and 26. Must have H.S. Diploma/GED	Spouse or Child over 18. Must have H.S. Diploma/GED
Covers Costs of	Tuition & Fees, housing, books/supplies, relocation	Tuition & Fees	Tuition & Fees, books/supplies	Tuition & Fees	Tuition & Fees, housing, books/supplies, relocation	Tuition & Fees
Covers Collegiate Flight Training	Yes	No	Yes	Yes	Yes	No
Benefit Amount (Maximum)						
Public College	Net tuition & Fees	$2,358/month	100%	Dependent on College Contribution	Net tuition & Fees	$1,488/month
Private College	$27,120/year	$2,358/month	100%		$27,120/year	
Non-college Flight Training	$15,497/year	60% of costs	100%	N/A	$15,497/year	
Duration	36 months	36 months	48 months	N/A	36 months	36 months
Transferable	Yes	No	No	N/A	N/A	N/A

- *Tuition Assistance.* In addition to VA benefits, the armed forces provide direct Tuition Assistance covering the cost of college tuition and course-specific fees for active duty service members, up to $250 per semester credit hour, not to exceed $4,500 per fiscal year. Eligible reservists may also receive Tuition Assistance and may combine it with Post-9/11 or Montgomery GI Bill benefits to the extent that Tuition Assistance does not cover the full cost of tuition and fees. Tuition Assistance does not cover the cost of books or course materials and may not be used for flight training fees.
- *Scholarships.* Scholarships provide important opportunities for aspiring pilots to fund or offset the costs of their training, particularly for individuals meeting requirements for scholarship programs aimed at increasing diversity in the pilot workforce. A variety of scholarships are offered by non-profit organizations, corporations, and other institutions, as well as by colleges and universities themselves. Scholarships are often, but not always, need-based. Scholarships may not cover the full costs of training, and not enough scholarships are available to fund training for all applicants or all pilots needed to sustain the industry.
    - *Reserve Officer Training Corps (ROTC) Scholarships.* An important subset of scholarships is ROTC scholarships. Each of the U.S. Army, U.S. Navy, and U.S. Air Force offer an ROTC scholarship program. Under the programs, students at participating colleges and universities may receive scholarships covering up to 100% of the costs of tuition and fees, as well as stipends and allowances, in exchange for a commitment to serve as a commissioned officer upon graduation.
    - *Armed Forces Service Academies.* The Armed Forces service academies serve as institutions of higher learning dedicated to preparing students for careers as officers in the U.S. Armed Forces, including careers as Armed Forces pilots. There is significant competition for admission, and applicants must demonstrate both academic and physical ability. Attendance at the service academies is tuition-free for those accepted.
- *Private Student Loans.* If an individual is unable to fund the costs of flight training through the sources described above, he or she must typically turn to private lenders to finance the remainder. Eligibility for and terms of

private loans are generally determined by the credit history and rating of borrowers and any co-signers, and do not take into account the certification or graduation rate of the training provider or the academic performance of the borrower or student.[37] Borrowers deemed to represent higher risk of default will have less borrowing power, and will be required to pay higher interest rates. Further, because they are based on having a sufficient credit history and score, private loans are disproportionately available, particularly for minority groups.

The interest rates and late payment terms on loans offered by private lenders are typically more onerous than those of Federal loans. Typical APRs for such loans range from 5 to 17 percent, although some borrowers may pay higher rates.

Under the general descriptor of private student loans are several subsets of loans with particular characteristics:

- *Aviation-Specific Loans.* Some lenders offer loans specifically designed for aviation students. For example, the Aircraft Owners and Pilots Association (AOPA) offers a flight training financing program that provides loans for flight training expenses. Similarly, the Pilot Finance, Inc. offers affordable loans specifically for part-time flight training.
- *Career Training Loans.* Some lenders offer career training loans, which are designed to cover the cost of vocational and trade schools, including flight training programs. These loans can be used to cover a variety of expenses, including tuition, books, and living expenses.
- *Personal Loans.* In some cases, students may choose to use a personal loan to finance their aviation training. While personal loans can be used for any purpose, they typically have higher interest rates than student loans and may not offer the same benefits, such as deferment options and tax-deductible interest.

[37] It is noted that officials from an institution of higher learning interviewed stated the rate of default of Federal Direct Loans for its students was approximately 2 percent prior to the deferment of loan payments during the novel coronavirus pandemic.

- *Institutional Loans.* Some flight schools and universities offer their own loan programs to help students finance their education. These loans vary widely in terms of interest rates, repayment options, and eligibility requirements.

- *Employer-backed Loans.* These are loans provided or backed by potential future employers for individuals attending airline owned or affiliated flight academies. These loans are similar to other private loans but may offer more attractive terms and conditions. As noted above, such loans are typically conditioned on an employment commitment by the borrower.

Financial Literacy/Awareness

In researching the costs of professional pilot training and the sources of funding used by students, it became apparent that students pursuing flight training or enrolled in aviation degree programs often have little awareness of financing options available to them, or of the impacts of borrowing large sums of money at unfavorable terms. Further, as a result of the complexity and opacity of the education financing landscape and process, students may be unaware of advantageous financing options, and may accept suboptimal borrowing terms.

KEY FINDINGS

- For individuals with the requisite aptitude and interest to pursue a career as a professional pilot, the greatest obstacles to achieving that goal may be the cost of flight training, the lack of easy access to financing, and the inability to make repayment on financing immediately after completing training.
- Regional and seasonable availability of Designated Pilot Examiners (DPE) has a significant impact on some students' ability to timely complete oral and practical examinations for certificates and ratings.
- Training and career pathways to becoming a professional pilot are increasing in both number and diversity.
- Some demographic groups, particularly women and persons of color, are disproportionately represented in the ranks of professional pilots.
- Despite a wide variety of training providers available to aspiring pilots, they lack ready access to reliable information needed to make meaningful comparisons between options.

  Secondary to this issue is a lack of financial literacy or awareness of available financing options, lack of appreciation of the impacts of borrowing large sums of money at unfavorable terms.
- There is no regulatory difference between flight academies offering robust, career-oriented training programs and flight schools with more general programs.

DATA COLLECTION

To support its drafting of this report and development of recommendations regarding pilot development pathways, in addition to its reliance on relevant literature and information sources, the P3 WG undertook data and information collection efforts to ensure its understanding of the relevant drivers and factors affecting air carriers, training providers, and individuals pursuing professional piloting careers. Data collection was primarily in the form of data collection tools circulated to air carriers and aviation universities by P3 WG members Airlines for America, Regional Airline Association, the University Aviation Association, the Aviation Accreditation Board International, and the US Department of Defense.

The Aviation University data collection tool focused on assessing quantitative and qualitative aspects of aviation degree programs including flight training, including aircraft and ground training equipment used by students, types of practical and ground training included in curricula or available to students, career support resources, and attendance costs.

The Air Carrier data collection tool focused on programs administered by air carriers to support or facilitate the training and career/personal development of potential pilots, including any financial or other assistance provided to program participants.

The P3 WG undertook data collection to inform its consideration of the state of air carrier pilot sourcing efforts and to provide support for its findings. Participation in data collection by educational institutions and air carriers was voluntary, and the responses provided represented only a small number of the participants in those communities. The P3 WG's findings are to a certain extent the product of the experience and insight of the Workgroup members, corroborated by information captured by the data collection tools and obtained from other sources.

The data collected by use of the Aviation University and Air Carrier data collection tools can be found in the Appendix to this report.

APPENDIX: AVIATION UNIVERSITY AND AIR CARRIER DATA

Question	Responses									
Air Carrier Type ***(Do you conduct operations under Part 121 or Part 135?)***	**Part 121**	18		**Part 135**	0					
Do you operate as a Mainline, Regional, or Cargo Air Carrier?	**Mainline**	15		**Regional**	2		**Cargo**	1		
Do you have a Program/Initiative to recruit or develop future pilot applicants?	**Yes**	14		**No**	4					
How would you characterize the program/initiative?	**Pathway to becoming a pilot for existing employee groups**	4		**Direct entry - pilots only**	2		**Flow-through program**	1		**Other (8)** Cadet Program; University Partnership; Pathway program; Pathway Program for Family Members of Current Employees; Pathway to becoming a pilot for existing private pilots and employee groups; Pathway to becoming a pilot for those with little to no experience; Intern and flow-through program; Wholly Owned Part 141 Flight Program

Question	Responses											
What is the intended outcome or benefit of the program?	**To become an effective leader**	9		**To build overall experience**	12		**To accrue Flight Time**	12		**Other (4)** To Become a [Responding Airline] First Officer; Create pilots eligible for Part 121 employment; provide secure direct path; Early job offer for military aviators		
Does the program/initiative involve a partnership/affiliation/relationship with a school or other training organization?	**Yes**	12		**No**	2							
Intake Source *(From what entity/source are pilots entering the program typically drawn?)*	**Accredited College or University**	7		**Part 61 Flight School**	2		**Part 141 Flight School**	7		**Part 91 or 135 operator**	2	**Other (7)** We hire candidates off the street; they are trained under Part 141 at our partner training organization; [Responding Airline] employees interested in becoming pilots; Our employees at [Responding Airline]; we then provide the list of accepted students to the partner school; Family members of current [Responding Airline] employees; Open to all interested, high school outreach efforts for recruitment; Part 121; U.S. Military
Prior aeronautical experience *(How much aeronautical experience do pilots entering the program/initiative typically have?)*	**0-100 hours total time**	10		**101-250 hours total time**	2		**251-500 hours total time**	2		**500+ hours total time**	0	

Question	Responses							
What certificate(s)/rating(s) do pilots entering the program/initiative typically have? (Select all that apply.)	None 7	Private Pilot Certificate 13	Instrument Rating 8	Commercial Pilot Certificate 6	Multi-engine Rating 5	Flight Instructor Certificate 5	Flight Instructor Instrument Rating 5	Multi-engine Flight Instructor 5	ATP 1	Other (1) U.S. Armed Forces undergraduate pilot training (UPT) for manned aircraft
Selection/Entry Criteria *(Do you use an initial selection process?)*	Yes 14	No 0								
Diversity Efforts/Components *(Does your program/initiative have aspects or characteristics that encourage diversity in participants/the pilot workforce?)*	Yes 12	No 2								
Timeframe *(What is the end point of the program/initiative?)*	Gap for experience building 0	Employment with experience building opportunity short of air carrier 0	Employment with air carrier 13	Other (1) Gap or employment at the Academy						
Cost to Student/Financing Options *(Is there an out of pocket monetary cost for the student?)*	Yes 12	No 2								
How is it paid?	Grant/In-Kind 7	Loan 11	GI Bill 6	Other (3) [Responding Airline] training stipend of $12,500; Commercial training stipend of $26,463; Loan or out of pocket [not counted with "Loan"]						
Are participants required to make an employment commitment?	Yes 3	No 11								

Question	Responses															
What is the commitment timeframe?	**Less than 2 years**	1		**2 to 3 years**	2											
What types of training are included in the program/initiative?	**Flight training (in aircraft)**	12		**Flight training (simulator)**	10		**1:1 ground training**	9		**Classroom training**	11		**Computer-based training**	11		**Other (2)** Dependent on affiliated flight school; [Program] is a pathway program. Not a training institution
Throughput Success Rate *(What percentage of initial participating pilots successfully complete the program/initiative?)*	**50% or less**	0		**51-75%**	1		**75-85%**	2		**85-90%**	2		**90-95%**	3		**95-100%**
Mentoring/Pilot Professional Development *(Does the program/initiative include any mentoring/professional development characteristics?)*	**Yes**	14		**No**	0											
Can all information you supply on this form be included in the ACT ARC's public report to the Federal Aviation Administration?	**Yes**	12		**No**	2											
Would you/your organization be amenable to speaking with the P3 Workgroup in person or virtually?	**Yes**	12		**No**	2											

Air Carrier Information

Air Carrier Type *(Do you conduct operations under Part 121 or Part 135?)*

All Respondents Part 121

Do you operate as a Mainline, Regional, or Cargo Air Carrier?

Delta Airlines	Mainline
Hawaiian Airlines	Mainline
Horizon Air	Regional
JetBlue Airways	Mainline
National Airlines	Cargo
Spirit Airlines	Mainline
United Airlines	Mainline
UPS	Mainline

Can all information you supply on this form be included in the ACT ARC's public report to the Federal Aviation Administration?

Delta Propel	Yes
Delta Propel (2)	Yes
Horizon Ascend Pilot Academy	Yes
Horizon Pilot Development Pgrm	No
JetBlue Gateway Direct	Yes
JetBlue Gateway Family	Yes
JetBlue Gateway Flex	Yes
JetBlue Gateway Select	No [Response may have been inadvertent]
JetBlue Gateway University	Yes
Spirit Wings Pilot Pipeline Pgm	Yes
United Aviate	Yes

Air Carrier Information

United Aviate Academy	Yes
United Aviate - Pilot Pathway	Yes
United Military Pilot Program	Yes
UPS FlightPath I	Yes

Would you/your organization be amenable to speaking with the P3 Workgroup in person or virtually?	
Delta Propel	Yes
Delta Propel (2)	Yes
Horizon Ascend Pilot Academy	No
Horizon Pilot Development Pgrm	No
JetBlue Gateway Direct	Yes
JetBlue Gateway Family	Yes
JetBlue Gateway Flex	Yes
JetBlue Gateway Select	Yes
JetBlue Gateway University	Yes
Spirit Wings Pilot Pipeline Pgm	Yes
United Aviate	Yes
United Aviate Academy	Yes
United Aviate - Pilot Pathway	Yes
United Military Pilot Program	Yes
UPS FlightPath I	Yes

Program/Initiative Information

Do you have a Program/Initiative to recruit or develop future pilot applicants?

Delta Airlines	Yes
Hawaiian Airlines	No
Horizon Air	Yes
JetBlue Airways	Yes
National Airlines	No
Spirit Airlines	Yes
United Airlines	Yes
UPS	Yes

What is the name of the program or initiative? *(If you have more than one program/initiative, please complete this survey for each one.)*

Delta Airlines	Propel (2 responses)
Horizon Air	Ascend Pilot Academy
Horizon Air	Pilot Development Program
JetBlue Airways	JetBlue Gateway Direct
JetBlue Airways	JetBlue Gateway Family
JetBlue Airways	JetBlue Gateway Flex
JetBlue Airways	JetBlue Gateway Select
JetBlue Airways	JetBlue Gateway University
Spirit Airlines	Spirit Wings Pilot Pipeline Program
United Airlines	United Aviate
United Airlines	United Aviate Academy
United Airlines	United Aviate - Pilot Pathway
United Airlines	United Military Pilot Program
UPS	FlightPath I

Program/Initiative Information

How would you characterize the program/initiative?

Delta Propel	Pathway to becoming a pilot for existing employee groups
Delta Propel (2)	Pathway to becoming a pilot for existing employee groups
Horizon Ascend Pilot Academy	Pathway to becoming a pilot for those with little to no experience
Horizon Pilot Development Pgrm	Pathway to becoming a pilot for existing private pilots and employee groups
JetBlue Gateway Direct	Pathway to becoming a pilot for existing employee groups
JetBlue Gateway Family	Pathway Program for Family Members of Current Employees
JetBlue Gateway Flex	Pathway to becoming a pilot for existing employee groups
JetBlue Gateway Select	Pathway program
JetBlue Gateway University	University Partnership
Spirit Wings Pilot Pipeline Pgm	Cadet Program
United Aviate	Flow-through program
United Aviate Academy	Wholly Owned Part 141 Flight Program
United Aviate - Pilot Pathway	Direct entry - pilots only
United Military Pilot Program	Direct entry - pilots only
UPS FlightPath I	Intern and flow-through program

What is the intended outcome or benefit of the program?

Delta Propel	To become an effective leader;To build overall experience;To accrue flight time;
Delta Propel (2)	To become an effective leader;To build overall experience;To accrue flight time;
Horizon Ascend Pilot Academy	To build overall experience;To accrue flight time;Create pilots eligible for Part 121 employment;
Horizon Pilot Development Pgrm	To build overall experience;To accrue flight time;
JetBlue Gateway Direct	To become an effective leader;To build overall experience;To accrue flight time;
JetBlue Gateway Family	To become an effective leader;To build overall experience;To accrue flight time;
JetBlue Gateway Flex	To become an effective leader;To build overall experience;To accrue flight time;

Program/Initiative Information

JetBlue Gateway Select	To become an effective leader;To build overall experience;To accrue flight time;
JetBlue Gateway University	To become an effective leader;To build overall experience;To accrue flight time;
Spirit Wings Pilot Pipeline Pgm	To Become a Spirit Airlines First Officer ;
United Aviate	To become an effective leader;To build overall experience;To accrue flight time;provide secure direct path;
United Aviate Academy	To build overall experience;To accrue flight time;
United Aviate - Pilot Pathway	To build overall experience;To become an effective leader;To accrue flight time;
United Military Pilot Program	Early job offer for military aviators;
UPS FlightPath I	To build overall experience;To become an effective leader;To accrue flight time;

Does the program/initiative involve a partnership/affiliation/relationship with a school or other training organization?

Delta Propel	Yes
Delta Propel (2)	Yes
Horizon Ascend Pilot Academy	Yes
Horizon Pilot Development Pgrm	Yes
JetBlue Gateway Direct	Yes
JetBlue Gateway Family	Yes
JetBlue Gateway Flex	No
JetBlue Gateway Select	Yes
JetBlue Gateway University	Yes
Spirit Wings Pilot Pipeline Pgm	Yes
United Aviate	Yes
United Aviate Academy	Yes
United Aviate - Pilot Pathway	Yes
United Military Pilot Program	No
UPS FlightPath I	No

Program/Initiative Information

What preference, if any, is offered/given to graduates of that school or organization?

Delta Propel	Direct entry to Regional Specific timeline to ML Delta
Delta Propel (2)	Students at partner universities and flight school are eligible to apply to Propel, and if selected, will receive a QJO to become a Delta Air Lines pilot, assuming they complete all requirements of the program
Horizon Ascend Pilot Academy	Conditional job offer with Horizon Air as a First Officer and the opportunity to apply/interview for Alaska Airlines through the Alaska Airlines Pilot Pathway Program
Horizon Pilot Development Pgrm	Conditional job offer with Horizon Air.
JetBlue Gateway Direct	We select our candidates internally and then provide the list to the partner school for enrollment/onboarding.
JetBlue Gateway Family	We select the candidates ourselves, and then provide names to the partner school
JetBlue Gateway Flex	
JetBlue Gateway Select	We select the candidates first and then they are trained by our partner according to an agreement.
JetBlue Gateway University	Students at our partner schools can earn a conditional job offer as a first officer at JetBlue while still enrolled in the partner college/university.
Spirit Wings Pilot Pipeline Pgm	They are hired as Spirit First Officers
United Aviate	Eligibility to the program. A conditional Job Offer and defined path and transition requirements to United Airlines
United Aviate Academy	Job offer at United Airlines upon completion of required flight training and hour building.
United Aviate - Pilot Pathway	Once partners are accepted into the program they receive a Conditional Job Offer with united airlines along with mentoring, pass travel on United and access to exclusive Aviate participant experience events.
United Military Pilot Program	
UPS FlightPath I	

Participants ***(What organizations participate in the program or initiative (including the reporting organization)?)***

Program/Initiative Information

Delta Propel	Collegiate Programs Internal Company Pathways Propel Flight Academy Various Part 141 Academies
Delta Propel (2)	Universities: Auburn, Middle Georgia, Middle Tennessee, California Aeronautical, Elizabeth City, Hampton, Western Michigan, UND, Embry-Riddle (Daytona & Prescott), Kent State, Minnesota State-Mankato, Southeastern Oklahoma, Jacksonville, Arizona State, Southern Illinois, Inter American Flight Schools: Skyborne Airline Academy, ATP, FLYT Aviation
Horizon Ascend Pilot Academy	Hillsboro Aero Academy
Horizon Pilot Development Pgrm	ATP Flight School, Big Bend Community College, California Aeronautical University, California Baptist University, Central Oregon Community College, Central Washington University, Clover Park Technical College, Crest Airpark, Embry-Riddle Aeronautical University, Galvin Flying, Green River College, Hillsboro Aero Academy, Kenai Aviation, Lane Community College, Pacific Aviation NW, Rainier Flight Service, Rocky Mountain College, Safety in Motion, Snohomish Flying Service, Inc., Spanaflight, Summit Aviation LLC (Gallatin College at MSU), University of Alaska - Anchorage, University of North Dakota, Utah State University, Utah Valley University, Walla Walla University, Willamette Aviation Service, LLC or another school of the students choosing.
JetBlue Gateway Direct	Aviator College, Cape Air, Tradewind, JSX, JetBlue
JetBlue Gateway Family	Aviator College, Cape Air, Tradewind Aviation, JSX; students can also choose to train at the flight training location of their own choosing
JetBlue Gateway Flex	JetBlue; students can choose their own flight school to get their primary certificates/ratings.
JetBlue Gateway Select	CAE
JetBlue Gateway University	If you are a student at Auburn University, Bridgewater State University, Embry-Riddle Aeronautical University - Daytona, Elizabeth City State University, Embry-Riddle Aeronautical University - Prescott, Farmingdale State College, Florida Tech, Hampton University, Interamerican University of Puerto Rico, Jacksonville University, Kent State, University of North Dakota, or Vaughn College, you can apply and interview while still in college. Additional potential partners (participants can select the partner for time-building) include Cape Air, Tradewind Aviator and JSX.
Spirit Wings Pilot Pipeline Pgm	ATP, CAE, L3, International Aero Academy, Lynn University and more.

United Aviate	University Partners:	Lewis University
	Auburn	CAU
	Delaware State	Flight Schools:
	ECSU	ATP
	ERAU-DAB	Cornerstone Aviation
	ERAU-Prescott	Epic Flight Academy
	FIT	Phoenix East Aviation
	Hampton	US Aviation
	Kent State	Aviate Academy
	Louisiana Tech	Part 135:
	Metro State Univ-DEN	Ameriflight
	Ohio State University	JSX
	Purdue	Wiggins
	SIU	Tradewind
	Middle Georgia State	UAX:
	UND	CommuteAir
	UNO	GoJet
	Western Michigan	Mesa

Program/Initiative Information

United Aviate Academy	
United Aviate - Pilot Pathway	Universities, Professional flight training organizations, part 135 operators and part 121 regional carriers.
United Military Pilot Program	
UPS FlightPath I	Ameriflight (Part 135 Cargo)

Program/Initiative Description ***(Provide a description of the program/initiative sufficient to describe how it works, including incentives to student participation.)***

Delta Propel	Collegiate-apply/selected in the Junior year. Direct entry into Regional with required flight time. Specific timeline to ML Delta Company Pathway-apply/selected once a year. Financial incentives for flight school. Direct entry into Regional with required flight time. Specific timeline to ML Delta. Propel Flight Academy-apply anytime. Financial incentives for flight school. Direct entry into Regional with required flight time. Specific timeline to ML Delta
Delta Propel (2)	Propel offers pathway options to 4 populations: Collegiate Aviation students enrolled at partner universities, Delta employees looking to transition their careers to become pilots, students enrolled at the Propel Flight Academy, and students recommended by Delta's partner organizations. If selected, they receive a qualifying job offer to become a Delta pilot with an accelerated path to Delta, are assigned a Delta pilot mentor, receive unique engagement opportunities with Delta, and eligible for pass travel privileges on Delta. They are also eligible for certain offers/discounts available through Delta partners.
Horizon Ascend Pilot Academy	Ascend Pilot Academy, in partnership with Hillsboro Aero Academy, aims to provide aspiring pilots a simpler, more financially accessible path to becoming a student pilot. Enrolled cadets will be eligible for access to financial aid, and a stipend up to $26,463 upon signing on to work for Horizon Air.
Horizon Pilot Development Pgrm	When you're a student pilot, finding the right support and guidance for launching your career as a pilot can be challenging. Horizon Air is here to help. Pilots who are enrolled in our pilot development program will receive a $12,500 stipend, have opportunities to develop skills through mentoring from a professional pilot, and be included in special events. After completing the program and meeting all qualifications, you'll be assigned a class date with Horizon Air and on the fastest path to mainline flying at Alaska Airlines.

Program/Initiative Information

JetBlue Gateway Direct	The JetBlue Gateway Direct-Flight Ops program offers selected crewmembers a defined pathway to becoming a first officer. By mirroring the selection process used for our Gateway Select program, we're able to cast a wide net with our candidate pool and make this program accessible to an even broader array of qualified candidates.
JetBlue Gateway Family	The Gateway Family program offers children/step-children, spouses, siblings and parents of JetBlue crewmembers a defined pathway to becoming a JetBlue first officer. Depending on the experience and certificates/ratings held, accepted candidates can choose from our Direct or Flex options to gain the necessary training and experience necessary to be a successful pilot at JetBlue.
JetBlue Gateway Flex	The Gateway Flex-Flight Ops program is for current JetBlue crewmembers who are seeking flexibility on their path to becoming a JetBlue pilot. A crewmember selected for Gateway Flex will have the opportunity to take a leave of absence (LOA) from their current position for up to one year to start gaining the necessary qualifications and experience. Upon completion of that one-year LOA, the crewmember will then fully separate from JetBlue to finish completing all the program training at a training facility of their choice and then meet our time-building requirements. Once their training and experience-building are completed, the selected candidate will return to JetBlue as a first officer.
JetBlue Gateway Select	The Gateway Select program is an innovative talent pathway for those with little or no flying experience to become pilots at JetBlue. This program will allow an applicant, if successful, to learn with us from the beginning and become a JetBlue pilot after completing a rigorous training program. The program will optimize the training of prospective airline pilots by offering early exposure to multi-crew/multi-engine operations, full-motion simulator training, crew resource management, and threat and error management. Once meeting all program requirements, including the FAA's 1,500 flight-hour requirements and all of JetBlue's first officer hiring requirements, program graduates will then become new-hire pilots at JetBlue. At that time, graduates will go through the same orientation and six-week instruction that all first officers complete.
JetBlue Gateway University	The first of our JetBlue Pilot Gateway Programs®, Gateway University is the longest-running path program for aviation college students. Gateway University was launched in 2008 and allows students majoring in flight programs at one of our partner colleges/universities to earn a conditional job offer for a position as a first officer at JetBlue. Once accepted, students complete their flight training and education in their program and then follow one of several prescribed paths to gain experience and build their flight time. Provided they meet all program requirements and pass required background and other related checks, those in the program will join JetBlue as first officers and will not be required to complete any additional JetBlue interviews.
Spirit Wings Pilot Pipeline Pgm	Cadet pilots enter the program at 500 hours and they are given a conditional job offer upon successful completion of training.

Program/Initiative Information

United Aviate	https://unitedaviate.com/ Eligibility through Aviate ecosystem and various entry points. Provides a conditional job offer to United Airlines with clear program expectations and transition commitments. Also provides mentorship via a United Airlines pilot coach. Provides travel benefits. For the complete program https://unitedaviate.com/documents/Aviate-Program-Guide.pdf?updated=20230608
United Aviate Academy	United Aviate Academy is a part 141 flight school in Goodyear Arizona that provides flight training to students with the goal of reaching United Airlines as part of the Aviate program.
United Aviate - Pilot Pathway	A direct path. Aviate participants can transition to United as a First Officer upon successful completion of the Aviate program and hiring requirements. Coaching. Aviate participants will have the opportunity to participate in a coaching program and receive mentorship from United pilots. Culture. You'll gain deeper connections with our United team, with access to senior leadership, site visits and tours, and an inside look at our inclusive culture.
United Military Pilot Program	Delayed-entry First Officer recruiting program designed to give United better opportunities to hire military pilots. United will provide early conditional job offers (CJOs) for military aviators while they are still on active duty, and help manage the transition from hostile airspace to friendly skies. No ATP required to apply, interview, and receive a job offer. Participants will be required to complete an unrestricted ATP prior to being hired at United.
UPS FlightPath I	UPS FlightPath I is intended to offer participants an outlined path to gain Part 135 flying experience and accumulate the flight experience needed to proceed to UPS Airlines, a Part 121 certificated air carrier. By participating in Path I, UPS FlightPath Interns can take advantage of unique hands-on experiences and develop highly desirable professional skills, all while working at a Part 121 cargo airline. Stage 1-12-month internship (non-flight) in UPS flight operations. Must acquire 500 hours total time to be eligible to proceed to Ameriflight and Stage 2 Stage 2-Minimum 30 month flying position with Ameriflight. Receive a type rating from Ameriflight with an additional 1,500 hours turbine PIC, with preferably at least 500 of those PIC hours in the EMB 120 aircraft or other crew type certificated aircraft Stage 3-After meeting all the stage 2 requirements, receive a recommendation from Ameriflight and then interview for a First Officer position with UPS

Program Candidate Information

Intake Source ***(From what entity/source are pilots entering the program typically drawn?)***	
Delta Propel	Accredited College or University;Part 141 Flight School;
Delta Propel (2)	Part 141 Flight School;Accredited College or University;
Horizon Ascend Pilot Academy	Open to all interested, high school outreach efforts for recruitment;
Horizon Pilot Development Pgrm	Accredited College or University;Part 61 Flight School;Part 91 or 135 operator;Part 141 Flight School;
JetBlue Gateway Direct	Our employees at JetBlue; we then provide the list of accepted students to the partner school;
JetBlue Gateway Family	Family members of current JetBlue employees;
JetBlue Gateway Flex	JetBlue employees interested in becoming pilots ;
JetBlue Gateway Select	We hire candidates off the street; they are trained under Part 141 at our partner training organization;
JetBlue Gateway University	Accredited College or University;
Spirit Wings Pilot Pipeline Pgm	Accredited College or University;Part 141 Flight School;
United Aviate	Accredited College or University;Part 61 Flight School;Part 141 Flight School;Part 91 or 135 operator;Part 121;
United Aviate Academy	Part 141 Flight School;
United Aviate - Pilot Pathway	Part 141 Flight School;Accredited College or University;
United Military Pilot Program	U.S. Military;
UPS FlightPath I	Accredited College or University;Part 141 Flight School;

Prior aeronautical experience ***(How much aeronautical experience do pilots entering the program/initiative typically have?)***	
Delta Propel	0-100 hours total time
Delta Propel (2)	101-250 hours total time
Horizon Ascend Pilot Academy	0-100 hours total time
Horizon Pilot Development Pgrm	101-250 hours total time
JetBlue Gateway Direct	0-100 hours total time
JetBlue Gateway Family	0-100 hours total time

Program Candidate Information

JetBlue Gateway Flex	0-100 hours total time
JetBlue Gateway Select	0-100 hours total time
JetBlue Gateway University	0-100 hours total time
Spirit Wings Pilot Pipeline Pgm	251-500 hours total time
United Aviate	0-100 hours total time
United Aviate Academy	0-100 hours total time
United Aviate - Pilot Pathway	0-100 hours total time
United Military Pilot Program	251-500 hours total time
UPS FlightPath I	251-500 hours total time

What certificate(s)/rating(s) do pilots entering the program/initiative typically have? (Select all that apply.)	
Delta Propel	None;Private Pilot Certificate;
Delta Propel (2)	Private Pilot Certificate;Instrument Rating;Commercial Pilot Certificate;
Horizon Ascend Pilot Academy	None;Private Pilot Certificate;
Horizon Pilot Development Pgrm	Instrument Rating;Commercial Pilot Certificate;Multi-engine Rating;Flight Instructor Certificate;Flight Instructor Instrument Rating;Multi-engine Flight Instructor;Private Pilot Certificate;
JetBlue Gateway Direct	None;Private Pilot Certificate;
JetBlue Gateway Family	None;Private Pilot Certificate;Instrument Rating;Commercial Pilot Certificate;Multi-engine Rating;Flight Instructor Certificate;Flight Instructor Instrument Rating;Multi-engine Flight Instructor;
JetBlue Gateway Flex	None;Private Pilot Certificate;Instrument Rating;Commercial Pilot Certificate;Multi-engine Rating;Flight Instructor Certificate;Flight Instructor Instrument Rating;Multi-engine Flight Instructor;
JetBlue Gateway Select	None;Private Pilot Certificate;
JetBlue Gateway University	Instrument Rating;Private Pilot Certificate;
Spirit Wings Pilot Pipeline Pgm	Private Pilot Certificate;Instrument Rating;Commercial Pilot Certificate;Multi-engine Rating;Flight Instructor Certificate;Flight Instructor Instrument Rating;Multi-engine Flight Instructor;

Program Candidate Information

United Aviate	Private Pilot Certificate;Instrument Rating;Commercial Pilot Certificate;Multi-engine Rating;Flight Instructor Certificate;Flight Instructor Instrument Rating;Multi-engine Flight Instructor;ATP;
United Aviate Academy	None;Private Pilot Certificate;
United Aviate - Pilot Pathway	Private Pilot Certificate;Instrument Rating;
United Military Pilot Program	U.S. Armed Forces undergraduate pilot training (UPT) for manned aircraft;
UPS FlightPath I	Flight Instructor Certificate;Private Pilot Certificate;Commercial Pilot Certificate;Instrument Rating;Multi-engine Rating;

Selection/Entry Criteria *(Do you use an initial selection process?)*/What traits are you looking for and can you describe the process?	
Delta Propel	Yes; Aptitude, Professionalism, Corporate fit. Applicants in all programs: 1. Submit an Indepth application. Reviewed by industry experts (highly competitive). 2. Pass an assessment 3. Pass a panel interview
Delta Propel (2)	Yes; Four stage selection process, including an application review, online assessment of personality and congitive skills, HR style interview, and psychological screening and virtual meeting with a psychologist. Process review includes flight training history, employment history, educational history. Overall looking for candidates who have the technical skill along with being a cultural fit
Horizon Ascend Pilot Academy	Yes; The process involves an application through our career site followed by a resume review. Selected candidates will then be invited to complete a video assessment and the final stage for selected candidates is a panel interview with talent acquisition and a representative from the Chief Pilot's Office. The traits we look for are those who demonstrate our core values of own safety, do the right thing, be kind-hearted, deliver performance, and be remarkable. We look for those who understand the commitment of the program and have the determination to join an accelerated program to become commercial pilot.
Horizon Pilot Development Pgrm	Yes; Students apply to the Pilot Development Program online. During resume review we are currently looking for students who hold a private pilot license and hold minimal check ride failures. Selected candidates are then moved forward to a panel interview with talent acquisition and the chief pilot's office. We often look for traits that exemplify our core values of safety, do the right thing, be kindhearted, deliver performance and be remarkable.

Program Candidate Information

JetBlue Gateway Direct	Yes; Students complete a selection process that includes an application, letters of recommendation and interview. Through the selection process, we are looking for traits/competencies including (but not limited to) safety-minded, rules/regulations focused, decision-making, CRM, communication and a cultural add to our organization. There is also a computer-based assessment that looks at things like eye-hand coordination, personality and cognitive ability.
JetBlue Gateway Family	Yes; Students complete a selection process that includes an application, letters of recommendation and interview. Through the selection process, we are looking for traits/competencies including (but not limited to) safety-minded, rules/regulations focused, decision-making, CRM, communication and a cultural add to our organization.
JetBlue Gateway Flex	Yes; Students complete a selection process that includes an application, letters of recommendation and interview. Through the selection process, we are looking for traits/competencies including (but not limited to) safety-minded, rules/regulations focused, decision-making, CRM, communication and a cultural add to our organization.
JetBlue Gateway Select	Yes; Students complete a selection process that includes an application, letters of recommendation, a computer-based assessment and interview. Through the selection process, we are looking for traits/competencies including (but not limited to) safety-minded, rules/regulations focused, decision-making, CRM, communication and a cultural add to our organization. The assessment also looks at things like eye-hand coordination, personality, and cognitive traits.
JetBlue Gateway University	Yes; Students complete a selection process that includes an application, letters of recommendation and interview. Through the selection process, we are looking for traits/competencies including (but not limited to) safety-minded, rules/regulations focused, decision-making, CRM, communication and a cultural add to our organization.
Spirit Wings Pilot Pipeline Pgm	Yes; Passion, technical knowledge
United Aviate	Yes; Each Candidate's interview will consist of a panel interview and a technical assessment. The panel interview consists of behavior-based questions and a technical assessment is used to determine whether the Candidate has the foundational knowledge required to be successful as a pilot at United. The technical assessment is calibrated for the Candidate's entry point and expected level of knowledge.
United Aviate Academy	Yes; Students complete an assessment, interview, and conditional admissions process prior to joining the Academy.

Program Candidate Information

United Aviate - Pilot Pathway	Yes; Aviate is an eligibility based program. Candidates must satisfy all of the following requirements in order to be eligible to apply to Aviate through any entry point: 1. hold a Private Pilot Certificate; 2. hold a valid FAA medical certificate that was originally issued as a first- or second-class medical certificate; 3. have a high school diploma or GED equivalent; and 4. not have exceeded the maximum number of Attempts (as defined in Chapter 3) to apply to Aviate, a prior pilot carrier path program
United Military Pilot Program	Yes; Military aviators currently on active-duty flying status
UPS FlightPath I	Yes; -Commercial Pilot Certificate with Multi-Engine and Instrument ratings -Graduated within the previous 24 months, or currently enrolled as a junior or senior in an undergraduate or graduate program -3.0 GPA or higher -Prefer around 300 hours total time since they will need to acquire 500 hours total time before proceeding to Ameriflight -Prefer CFI so the candidate can continue to build time during the internship process Candidates go through the normal HR hiring process for a non-flight position at UPS. The interview process does focus on the candidate's aviation experience, however.

Quantitative Characteristics

Timeframe *(What is the end point of the program/initiative?)*	
Delta Propel	Employment with air carrier
Delta Propel (2)	Employment with air carrier
Horizon Ascend Pilot Academy	Employment with air carrier
Horizon Pilot Development Pgrm	Employment with air carrier
JetBlue Gateway Direct	Employment with air carrier
JetBlue Gateway Family	Employment with air carrier
JetBlue Gateway Flex	Employment with air carrier
JetBlue Gateway Select	Employment with air carrier
JetBlue Gateway University	Employment with air carrier
Spirit Wings Pilot Pipeline Pgm	Employment with air carrier
United Aviate	Employment with air carrier
United Aviate Academy	Gap or employment at the Academy
United Aviate - Pilot Pathway	Employment with air carrier
United Military Pilot Program	Employment with air carrier
UPS FlightPath I	Employment with air carrier

Cost to Student/Financing Options *(Is there an out of pocket monetary cost for the student?)*/What is the cost?/How is it paid?	
Delta Propel	Yes; Varies. However, Delta's programs allow payment to start at the end of the program when the candidates have employment.; Loan;Grant/In-Kind
Delta Propel (2)	Yes; Students are responsible for training costs, however Company and Academy participants are eligible for certain financial incentives.; Loan;Grant/In-Kind
Horizon Ascend Pilot Academy	Yes; Upwards of $70,000 or more depending on training progress; Grant/In-Kind;Loan;Commercial training stipend of $26, 463
Horizon Pilot Development Pgrm	Yes; Dependent on their affiliated flight school. ; Horizon training stipend of $12,500
JetBlue Gateway Direct	Yes; $80-90K; Loan;GI Bill;Grant/In-Kind
JetBlue Gateway Family	Yes; Varies; Grant/In-Kind;Loan;GI Bill

Quantitative Characteristics

JetBlue Gateway Flex	Yes; Depends on the chosen flight school ; Loan;Grant/In-Kind;GI Bill
JetBlue Gateway Select	Yes; ~$110,000; Loan
JetBlue Gateway University	Yes; Depends on the cost at each partner school; Loan;GI Bill;Grant/In-Kind
Spirit Wings Pilot Pipeline Pgm	Yes; The cost of initial training; Spirit will pay for the ATP/. tap ; GI Bill;Loan
United Aviate	No
United Aviate Academy	Yes; Tuition: $71,250, additional costs vary by student; Loan or out of pocket
United Aviate - Pilot Pathway	No
United Military Pilot Program	Yes; FAA Airline Transport Pilot (ATP), including ATP-CTP, written, and practical exam; Loan;GI Bill
UPS FlightPath I	No

Are participants required to make an employment commitment?/What is the commitment timeframe?	
Delta Propel	No;
Delta Propel (2)	No;
Horizon Ascend Pilot Academy	Yes; 2 to 3 years
Horizon Pilot Development Pgrm	Yes; 2 to 3 years
JetBlue Gateway Direct	No;
JetBlue Gateway Family	No;
JetBlue Gateway Flex	No;
JetBlue Gateway Select	No;
JetBlue Gateway University	No;
Spirit Wings Pilot Pipeline Pgm	Yes; Less than 2 years
United Aviate	No;
United Aviate Academy	No;
United Aviate - Pilot Pathway	No;

Quantitative Characteristics

United Military Pilot Program	No;
UPS FlightPath I	No;

Training (Flight) ***(How many hours of flight training does the program/initiative encompass?)***	
Delta Propel	Completion of training to CFI
Delta Propel (2)	Varies
Horizon Ascend Pilot Academy	360
Horizon Pilot Development Pgrm	Program duration is until student reaches ATP minimums.
JetBlue Gateway Direct	Students need to meet all requirements of an ATP without restriction before they can come to JetBlue as a first officer.
JetBlue Gateway Family	Students need to meet all requirements of an ATP without restriction before they can come to JetBlue as a first officer.
JetBlue Gateway Flex	Students need to meet all requirements of an ATP without restriction before they can come to JetBlue as a first officer.
JetBlue Gateway Select	Students need to meet all requirements of an ATP without restriction before they can come to JetBlue as a first officer.
JetBlue Gateway University	Students need to meet all requirements of an ATP without restriction before they can come to JetBlue as a first officer.
Spirit Wings Pilot Pipeline Pgm	1500
United Aviate	Not dictated by the program. Dependent on the school they are attending.
United Aviate Academy	~300
United Aviate - Pilot Pathway	ends when you have 1200 hours as a captain at our part 135 or part 121 partner
United Military Pilot Program	Zero
UPS FlightPath I	None

Training (Ground) ***(How many hours of ground/instructor led training does the program/initiative encompass?)***	
Delta Propel	Completion of training to CFI
Delta Propel (2)	Varies
Horizon Ascend Pilot Academy	200

Quantitative Characteristics

Horizon Pilot Development Pgrm	Dependent on affiliated flight school.
JetBlue Gateway Direct	0
JetBlue Gateway Family	Varies
JetBlue Gateway Flex	Depends on the individual flight school
JetBlue Gateway Select	250
JetBlue Gateway University	Varies by each college/university
Spirit Wings Pilot Pipeline Pgm	0
United Aviate	Not dictated by the program. Dependent on the school they are attending.
United Aviate Academy	Several hundred depending on student
United Aviate - Pilot Pathway	0
United Military Pilot Program	Zero
UPS FlightPath I	20, but these are optional

What types of training are included in the program/initiative?	
Delta Propel	Flight training (In aircraft);Flight training (simulator);1:1 ground training;Classroom training;Computer-based training;
Delta Propel (2)	Flight training (In aircraft);Flight training (simulator);Classroom training;Computer-based training;
Horizon Ascend Pilot Academy	Flight training (In aircraft);1:1 ground training;Classroom training;Computer-based training;
Horizon Pilot Development Pgrm	Flight training (In aircraft);Flight training (simulator);1:1 ground training;Classroom training;Computer-based training;Dependent on affiliated flight school ;
JetBlue Gateway Direct	Flight training (In aircraft);Flight training (simulator);1:1 ground training;Classroom training;Computer-based training;
JetBlue Gateway Family	Flight training (In aircraft);Flight training (simulator);1:1 ground training;Classroom training;Computer-based training;
JetBlue Gateway Flex	Flight training (In aircraft);Flight training (simulator);1:1 ground training;Classroom training;Computer-based training;
JetBlue Gateway Select	Flight training (In aircraft);Flight training (simulator);1:1 ground training;Classroom training;Computer-based training;
JetBlue Gateway University	1:1 ground training;Flight training (In aircraft);Flight training (simulator);Classroom training;Computer-based training;
Spirit Wings Pilot Pipeline Pgm	Flight training (In aircraft);Flight training (simulator);Classroom training;Computer-based training;

Quantitative Characteristics

United Aviate	Aviate is a pathway program. Not a training institution;
United Aviate Academy	1:1 ground training;Flight training (In aircraft);Flight training (simulator);Classroom training;
United Aviate - Pilot Pathway	Flight training (In aircraft);
United Military Pilot Program	Computer-based training;
UPS FlightPath I	Classroom training;Computer-based training;

Devices Used ***(What type of trainers or other devices are used in the program/initiative?)***	
Delta Propel	Standard Part 141 certified equipment
Delta Propel (2)	Those used by university and Part 141 fligth schools, as well as those used by regional airline training departments
Horizon Ascend Pilot Academy	0
Horizon Pilot Development Pgrm	N/A
JetBlue Gateway Direct	Piper aircraft (singles and twins), FTD
JetBlue Gateway Family	Varies depending on flight school
JetBlue Gateway Flex	Depends on the flight school
JetBlue Gateway Select	Piper Archers, Piper Seminoles, FTDs, cross-wind trainer
JetBlue Gateway University	Depends on availability at each partner college/university.
Spirit Wings Pilot Pipeline Pgm	Touch Screen Trainer, FTD and full motion simulator.
United Aviate	Aviate is a pathway program. Not a training institution
United Aviate Academy	Frasca simulators, Cirrus SR20, Piper Seminole, and Diamond DA42 Aircraft
United Aviate - Pilot Pathway	0
United Military Pilot Program	0
UPS FlightPath I	None, however, as interns they do have access to all UPS simulators and can use them if the simulators are available.

Quantitative Characteristics

Throughput Success Rate ***(What percentage of initial participating pilots successfully complete the program/initiative?)***	
Delta Propel	95-100%
Delta Propel (2)	90-95%
Horizon Ascend Pilot Academy	90-95%
Horizon Pilot Development Pgrm	85-90%
JetBlue Gateway Direct	0
JetBlue Gateway Family	0
JetBlue Gateway Flex	75-85%
JetBlue Gateway Select	85-90%
JetBlue Gateway University	75-85%
Spirit Wings Pilot Pipeline Pgm	95-100%
United Aviate	0
United Aviate Academy	0
United Aviate - Pilot Pathway	51-75%
United Military Pilot Program	90-95%
UPS FlightPath I	50% or less

Qualitative Characteristics

Diversity Efforts/Components *(Does your program/initiative have aspects or characteristics that encourage diversity in participants/the pilot workforce?)*/Please explain the aspects or characteristics of your program/initiative that encourage diversity.	
Delta Propel	Yes; Actively seek diversity in the recruiting process. Exposure to diverse organizations and underserved communities. Remove financial barriers Affiliated with diverse schools of higher learning (HBCU) and Industry organizations. Outreach programs for the next generation.
Delta Propel (2)	Yes; Partnership with diversity focused aviation organizations such as WAI, OBAP, NGPA, LPA, PAPA, as well as diversity focused schools such as Elizabeth City, Hampton, Inter American.
Horizon Ascend Pilot Academy	Yes; We partner and support several industry expos with organizations like: Organization of Black Aerospace Professionals, Sisters of the Skies, NGPA, Women in Aviation,
Horizon Pilot Development Pgrm	Yes; We have amazing partnerships with organizations like Women in Aviation, OBAP, NGPA and many more. Through these partnerships we attend conferences and sponsor student scholarships.
JetBlue Gateway Direct	Yes; All our programs aim to cast a wide net and remove barriers in order to reach every applicant that has the desire and ability to be successful as a JetBlue Pilot.
JetBlue Gateway Family	Yes; All our programs aim to cast a wide net and remove barriers in order to reach every applicant that has the desire and ability to be successful as a JetBlue Pilot.
JetBlue Gateway Flex	Yes; All our programs aim to cast a wide net and remove barriers in order to reach every applicant that has the desire and ability to be successful as a JetBlue Pilot.
JetBlue Gateway Select	Yes; All our programs aim to cast a wide net and remove barriers in order to reach every applicant that has the desire and ability to be successful as a JetBlue Pilot.
JetBlue Gateway University	Yes; All our programs aim to cast a wide net and remove barriers in order to reach every applicant that has the desire and ability to be successful as a JetBlue Pilot.
Spirit Wings Pilot Pipeline Pgm	Yes; Spirit Airlines is an equal opportunity employer and encourages pilots of all cultures and backgrounds to enter the program.
United Aviate	Yes; Partnership strategy takes into account student body diversity.
United Aviate Academy	Yes; United Aviate Academy has a goal of the student body being 50% Women or People of Color.

Qualitative Characteristics

United Aviate - Pilot Pathway	No
United Military Pilot Program	No
UPS FlightPath I	Yes; This program uses standard UPS HR hiring practices.

Mentoring/Pilot Professional Development *(Does the program/initiative include any mentoring/professional development characteristics?)*/Please describe the mentoring/professional development characteristics of your program/initiative.	
Delta Propel	Yes; Each candidate has a mentor. Each organization/flight school has liaisons.
Delta Propel (2)	Yes; Each participant is assigned a Delta pilot mentor, and they are required to check-in periodically. The mentor evaluates each participant and provides reporting to the Propel team
Horizon Ascend Pilot Academy	Yes; This formal mentoring program was created to demonstrate organizational support of its current and future pilots and foster a strong sense of community and inclusion.
Horizon Pilot Development Pgrm	Yes; Horizon Air Line Pilot Mentors. This is a professional pilot mentorship from our line pilots that provides support and insight to students as they complete their ATP minimums.
JetBlue Gateway Direct	Yes; Every Gateway student/pilot is paired with a current JetBlue pilot who offers them mentoring and guidance throughout their entire time in the program. The Gateways team also offers on-campus and virtual events for Gateway students to stay engaged with JetBlue and other Gateway students through our five JetBlue Pilot Gateway Programs. The Gateways team also engages with each student/pilot in a 1:1 capacity to ensure they are staying on track and engaged with the program.
JetBlue Gateway Family	Yes; Every Gateway student/pilot is paired with a current JetBlue pilot who offers them mentoring and guidance throughout their entire time in the program. The Gateways team also offers on-campus and virtual events for Gateway students to stay engaged with JetBlue and other Gateway students through our five JetBlue Pilot Gateway Programs. The Gateways team also engages with each student/pilot in a 1:1 capacity to ensure they are staying on track and engaged with the program.
JetBlue Gateway Flex	Yes; Every Gateway student/pilot is paired with a current JetBlue pilot who offers them mentoring and guidance throughout their entire time in the program. The Gateways team also offers on-campus and virtual events for Gateway students to stay engaged with JetBlue and other Gateway students through our five JetBlue Pilot Gateway Programs. The Gateways team also engages with each student/pilot in a 1:1 capacity to ensure they are staying on track and engaged with the program.

Qualitative Characteristics

JetBlue Gateway Select	Yes; Every Gateway student/pilot is paired with a current JetBlue pilot who offers them mentoring and guidance throughout their entire time in the program. The Gateways team also offers on-campus and virtual events for Gateway students to stay engaged with JetBlue and other Gateway students through our five JetBlue Pilot Gateway Programs. The Gateways team also engages with each student/pilot in a 1:1 capacity to ensure they are staying on track and engaged with the program.
JetBlue Gateway University	Yes; Every Gateway student/pilot is paired with a current JetBlue pilot who offers them mentoring and guidance throughout their entire time in the program. The Gateways team also offers on-campus and virtual events for Gateway students to stay engaged with JetBlue and other Gateway students through our five JetBlue Pilot Gateway Programs. The Gateways team also engages with each student/pilot in a 1:1 capacity to ensure they are staying on track and engaged with the program.
Spirit Wings Pilot Pipeline Pgm	Yes; Cadet pilots have access to Spirit Airlines instructors and management pilots throughout the entire development process to becoming a first officer. Additionally, a “Spirit day“ that occurs in person is scheduled annually to Place Cadet pilots in front of program administrators, and management pilots.
United Aviate	Yes; Each participant is assigned a United pilot as a coach, and given a required quarterly curriculum.
United Aviate Academy	Yes; Students are paired with an Aviate coach and have additional support from other organizations.
United Aviate - Pilot Pathway	Yes; Coaching. Aviate participants will have the opportunity to participate in a coaching program and receive mentorship from United pilots
United Military Pilot Program	Yes; Each program participant is matched with a current United Airlines pilot
UPS FlightPath I	Yes; Following the yearlong internship each candidate is assigned a current UPS pilot mentor who maintains contact with them during their time at Ameriflight.

What is unique about your program/initiative?	
Delta Propel	Pathway to ML Delta in a specified time. Financial incentives for Academy and Company Pathway.
Delta Propel (2)	Launched in 2018, we have had over 150 participants complete the program and reach a Delta flight deck.
Horizon Ascend Pilot Academy	Our program is structured to support accelerated flight training by providing financial support through a training stipend and offering financial aid through various lenders. Program students are also supported through their mentor-relationship and quarterly activities sponsored by the company. All program cadets are provided a conditional job offer to Horizon Air as a First Officer upon completion of ATP minimum requirements.
Horizon Pilot Development Pgrm	Our program provides a conditional job offer with Horizon Airlines, a stipend of $12,500, pilot mentors, special events, direct interview for the Alaska Airlines Pathways Program and competitive access to internships (dependent on affiliated flight school).

Qualitative Characteristics

JetBlue Gateway Direct	Our Gateways were the first and are the longest-running airline pathway programs in the industry. Gateway University, our first program, started in 2008 and continues to thrive, and we have added all our other programs since then. Our program has hundreds of pilots that are now successfully flying as first officers and captains at JetBlue. Those pilots are now mentors to the next generation of Gateway pilots. In the 15 years since our programs started, the attrition numbers for those that have left JetBlue after joining as first officers can be counted on one hand.
JetBlue Gateway Family	
JetBlue Gateway Flex	Our Gateways were the first and are the longest-running airline pathway programs in the industry. Gateway University, our first program, started in 2008 and continues to thrive, and we have added all our other programs since then. Our program has hundreds of pilots that are now successfully flying as first officers and captains at JetBlue. Those pilots are now mentors to the next generation of Gateway pilots. In the 15 years since our programs started, the attrition numbers for those that have left JetBlue after joining as first officers can be counted on one hand.
JetBlue Gateway Select	Our Gateways were the first and are the longest-running airline pathway programs in the industry. Gateway University started in 2008 and continues to thrive. Our program has hundreds of pilots that are now successfully flying as first officers and captains at JetBlue. Those pilots are now mentors to the next generation of Gateway pilots. In the 15 years since our programs started, the attrition numbers for those that have left JetBlue after joining as first officers can be counted on one hand.
JetBlue Gateway University	Our Gateways were the first and are the longest-running airline pathway programs in the industry. Gateway University started in 2008 and continues to thrive. Our program has hundreds of pilots that are now successfully flying as first officers and captains at JetBlue. Those pilots are now mentors to the next generation of Gateway pilots. In the 15 years since our programs started, the attrition numbers for those that have left JetBlue after joining as first officers can be counted on one hand.
Spirit Wings Pilot Pipeline Pgm	It offers a conditional offer of employment and circumnavigates the regional airlines.
United Aviate	Provides 7 entry points. Only secure direct path to United Airlines. Provides CJO with only a Private Pilot License. United Airlines pilot coaches. Travel benefits on United, including enrolling a friend. The industry-leading My Aviate mobile app on Apple and Android.
United Aviate Academy	It is owned wholly owned by United Airlines.
United Aviate - Pilot Pathway	One unique aspect of the Aviate program is that it allows participants entry at multiple points throughout their flight training. From working on your instrument at a University to flying for a part 135 operator, there is an entry point suited for everyone.
United Military Pilot Program	United matches military candidates with current UAL line pilots with similar prior military experience.
UPS FlightPath I	

Qualitative Characteristics

What challenges do you face in conducting/supporting your program/initiative? *(For example, does it draw resources away from other efforts? Do you have difficulty recruiting applicants?)*	
Delta Propel	We are appropriately resourced and staffed.
Delta Propel (2)	Competing airline pathway programs, barriers to entry for prospective participants (cost of flight training, college tuition, etc)
Horizon Ascend Pilot Academy	Our challenge is having cadets complete the program (PPL through CFII) within the syllabus timeline provided.
Horizon Pilot Development Pgrm	Program students fulfilling employee commitment due to industry landscape.
JetBlue Gateway Direct	We have no difficulty attracting candidates. The hardest part is just processing applicants and getting people through the process quickly to get them enrolled and on their path.
JetBlue Gateway Family	Our Gateways were the first and are the longest-running airline pathway programs in the industry. Gateway University, our first program, started in 2008 and continues to thrive, and we have added all our other programs since then. Our program has hundreds of pilots that are now successfully flying as first officers and captains at JetBlue. Those pilots are now mentors to the next generation of Gateway pilots. In the 15 years since our programs started, the attrition numbers for those that have left JetBlue after joining as first officers can be counted on one hand.
JetBlue Gateway Flex	We have no difficulty attracting candidates. The hardest part is just processing applicants and getting people through the process quickly to get them enrolled and on their path.
JetBlue Gateway Select	
JetBlue Gateway University	We have no difficulty attracting candidates. The hardest part is just processing applicants and getting people through the process quickly to get them enrolled and on their path.
Spirit Wings Pilot Pipeline Pgm	
United Aviate	
United Aviate Academy	
United Aviate - Pilot Pathway	As a business we need to hire so many pilots that we are forced to hire from outside of our program.
United Military Pilot Program	Many military pilots do not meet UAL preferred hiring criteria upon exit from the military, e.g., rotor pilots do not have sufficient fixed-wing and/or transport-category aircraft experience to succeed in training and initial operating experience.

Qualitative Characteristics

UPS FlightPath I	Over the history of the program, candidates have left prior to the Ameriflight stage or while flying at Ameriflight. Reasons vary from pursuing other opportunities, career change or shift in life goals/situation. We have almost 100% success rate for the candidates completing the one-year internship at UPS.

Question

BASIC INFORMATION

Identify any organizations (other than AABI) by which your institution is accredited.		**HLC**	8	**MSCHE**	1	**SACSCOC**	6	**Other (3)** FAA (2); ACCSC; ACCET			
Does your institution offer a 2-year or 4-year degree program?		**2-year**	1	**4-year**	12	**Both 2-year and 4-year**	4				
Does your institution have degree program(s) accredited by the Aviation Accreditation Board International (AABI)?		**Yes**	14	**No**	4						
Does your institution administer flight training directly, contract it to a separate organization, or both?		**Directly**	16	**Contracted**	1	**Both**	0				
What certificates and ratings are completed through a separate contracted flight training organization?		**Private Pilot Certificate**	1	**Instrument Rating**	1	**Commercial Pilot Certificate**	1	**Multi-engine Rating**	1	**Flight Instructor Certificate**	1
Do you (or your contracted provider) conduct training under part 61 or part 141?		**Part 61 only**	0	**Part 141 only**	7	**Both part 61 and part 141**	10				

Question

Do you conduct training for any certificates or ratings under part 61 only? *If so, please identify them.*		**Private Pilot Certificate**	1		**Commercial Pilot Certificate**	2		**Multi-engine Rating**	3		**Flight Instructor Certificate**	4		**Flight Instructor Instrument Rating**	6		**Multi-engine Flight Instructor**	7
Do you have examining authority under part 141?		**Yes**	9		**No**	9												
For which certificates/ratings do you have examining authority?		**Private Pilot Certificate**	4		**Instrument Rating**	4		**Commercial Pilot Certificate**	3		**Multi-engine Rating**	2		**Flight Instructor Certificate**	2		**Flight Instructor Instrument Rating**	1		**Multi-engine Flight Instructor**	1
Is your organization authorized by the FAA to certify graduates for an Airline Transport Pilot Certificate with Reduced Aeronautical Experience (R-ATP)?		**Yes**	17		**No**	1												
Are any of your degree programs offered solely via distance learning for academic education while using external flight training providers to complete the required flight training?		**Yes**	1		**No**	13												
Are any such programs approved for R-ATP qualification?		**Yes**	0		**No**	1												

Question

What class of airspace is your primary training facility located in?	**Class B**	1	**Class C**	2	**Class D**	11	**Class E**	2	**Class G**	2									
QUANTITATIVE INFORMATION																			
Approximately how many of your students enter your program with a Private Pilot certificate?	**None**	0	**<10%**	5	**10-25%**	5	**25-50%**	4	**50-75%**	1	**75-99%**	0	**100%**	0					
Approximately how much total aeronautical experience (flight hours and FSTD hours) do your students have, on average, when they obtain their Private Pilot Certificate (if applicable)?	**35-40 hours**	0	**40-50 hours**	0	**50-75 hours**	12	**75-90 hours**	4	**>90 hours**	1									
Approximately how much total aeronautical experience (flight hours and FSTD hours) do your students have, on average, when they obtain their Commercial Pilot Certificate?	**190-200 hours**	3	**200-220 hours**	6	**220-240 hours**	5	**240-260 hours**	2	**>260 hours**	0									
Approximately how much total aeronautical	**<70 hours**	0	**70-80 hours**	1	**80-100 hours**	4	**100-125 hours**	4	**125-150 hours**	3	**150-175 hours**	4	**175-200 hours**	0	**>200 hours**	1			

Question																					
experience (flight hours and FSTD hours) do your students have, on average, when they obtain their Instrument Rating?																					
Approximately how much total aeronautical experience (flight hours and FSTD hours) do your students have, on average, when they obtain their Multi-engine Rating?		<180 hours	0	180-200 hours	3	200-225 hours	2	225-250 hours	6	250-275 hours	3	275-300 hours	1		>300 hours	0					
Approximately what percentage of your students obtain a flight instructor certificate?		<10%	1	10-25%	0	25-50%	2	50-75%	6	75-90%	0	90-99%	3		100%	3					
Approximately what percentage of your students do you hire as flight instructors, either while they are enrolled or after program completion?		<10%	1	10-25%	3	25-50%	1	50-75%	2	75-90%	5	90-99%	3		100%	0					
What is the approximate distribution of Single- and Multi-engine flight hours for students completing your program?		100% single-engine	2	<5% multi / >95% single-engine	2	5-10% multi / 90-95% single-engine	3	10-15% multi / 85-90% single-engine	7	>15% multi / <85% single-engine	1										

Question

What is the distribution of aircraft and simulator time for students completing your program?		**100% aircraft**	0		**<5% simulator / >95% aircraft**	2		**5-10% simulator / 90-95% aircraft**	5		**10-15% simulator / 85-90% aircraft**	4		**15-20% simulator / 80-85% aircraft**	2		**20-25% simulator / 75-80% aircraft**	2		**25-30% simulator / 70-75% aircraft**	0		**>30% simulator / <70% aircraft**	0
Approximately what percentage of your students are international students (i.e., permanent residents of a country other than the US, and will most likely seek employment outside the US after completing training)?		**<5%**	8		**5-10%**	4		**10-20%**	0		**20-30%**	1		**30-40%**	0		**40-50%**	1		**>50%**	0			
How many total aircraft are in your training fleet?		**0**	0		**0-10**	1		**10-14**	3		**15-20**	5		**21-30**	3		**31-40**	0		**41-50**	3		**~100**	2
State how many of each of the following ground training devices are available for student training:																								
Glider		**0**	12		**1**	1																		
High Performance		**0**	7		**1**	3		**2**	1		**3**	1												
Multi-engine Complex		**0**	2		**1**	1		**2**	4		**3**	3		**4**			**5**	2		**7**	1		**12**	1
Single-engine		**0**	1		**7-8**	3		**13-19**	6		**22-24**	2		**40-45**	3		**87**	1						
Technically Advanced Airplanes		**0**	1		**2-4**	6		**7**	1		**10-11**	3		**50**	1		**99**	1						
Other (please identify)		**Tailwheel**	10		**Turboprop**	1		**No aircraft**	1															

Question

State how many of each of the following ground training devices are available for student training:																			
Virtual Reality (VR) devices		**0**	12	**2**	1	**4**	1	**26**	1										
Basic Aviation Training Devices (BATD)		**0**	8	**1**	3	**2**	3	**3**	1										
Advanced Aviation Training Devices (AATD)		**0**	1	**1**	3	**2**	4	**3-4**	3	**5-6**	2	**8-9**	3		**15**	1			
Level 5 Flight Training Devices (FTDs)		**0**	10	**1**	2	**2**	2	**3**	1	**4**	1								
Level 6 FTDs		**0**	14	**9**	1														
Level 7 FTDs		**0**	14																
Full Flight Simulators (FFS)		**0**	14	**1**	2														
Other (please identify)		**B737 Max FBPT**	1	**Cross-wind Procedure Trainers**	2														
QUALITATIVE INFORMATION																			
Does your organization offer an ATP/CTP course?		**Yes**	1	**No**	17														
Does your organization administer your ATP/CTP course directly, or is it		**N/A**																	

Question

contracted to a separate organization?										
What organization do you contract with to provide your ATP/CTP course?		**N/A**								
Do you provide Upset Prevention and Recovery Training (UPRT) as part of your training program?		**Yes**	4		**No**	14				
What type of aircraft is used for UPRT?		**C-52 Aerobat**	1		**C172**	1	**7ECA**	1		
Do you offer a jet transition course in a device that simulates a transport category aircraft?		**Yes**	9		**No**	7				
Approximately what percentage of students complete a jet transition course?		**<10%**	1		**25-50%**	2	**90-99%**	1		
What aircraft do you offer a jet transition course for?		**CRJ**	4		**King Air**	1	**737**	2	**Boeing, Hawker, Airbus**	1
Does your program include high-altitude training?		**Yes**	4		**No**	12				

Question

Which of the following does your high-altitude training incorporate? (Check all that apply.)	**Academic training**	3	**Hypobaric/Normobaric Chamber experience**	3	**In aircraft training/exposure**	1	**Simulator training/High-Altitude endorsement**	1	**Other** Chamber flight at CAMI in OKC	1
Is high-altitude training a mandatory part of your flight training program?	**Yes**	4	**No**	0						
For what certificates/ratings do students receive high-altitude training? (Check all that apply.)	**Commercial Pilot Certificate**	1	**Other** Other; Degree Requirement	2						
Do you use Virtual Reality/Augmented Reality (VR/AR) as part of your training program?	**Yes**	2	**No**	14						
Do all students undergo VR/AR training?	**Yes**	1	**No**	1						
What certificate/rating courses require VR/AR training in the syllabus? (Check all that apply.)	**Private Pilot Certificate**	1	**Free for students; not required for any certificate**	1						
Do you have a formal Safety Management System (SMS) that includes a processes to	**Yes**	14	**No**	2						

Question

identify hazards, assess risk, develop mitigations and control risk?							
Is your SMS approved under 14 CFR part 5?	**Yes**	4	**No**	9			
Does your organization have a safety director/manager?	**Yes**	12	**No**	1			
Does your SMS include promotion and measurement of safety culture?	**Yes**	13	**No**	0			
Identify any agencies/organizations that have validated your SMS.	**IS-BAO**	1	**Wyvern**	1	**Other** AABI (1) EASA (1)	2	
USE OF DATA							
Do you collect FDM/FOQA/FTD data as part of your training program?	**Yes**	1	**No**	5			
USE OF INFORMATION BY THE ACT ARC							
Can all information you supply on this form be included in the ACT ARC's	**Yes**	16	**No**	0			

Question

public report to the Federal Aviation Administration?					
Would you/your organization be amenable to speaking with the P3 Workgroup in person or virtually?	**Yes**	10		**No**	2

Basic Information/Use of Data/Tuition

Does your institution offer a 2-year or 4-year degree program?

Auburn University	4-year
Aviator Col of Aero Sci & Tech	Both 2-year and 4-year
Embry-Riddle Aeronautical Univ.	4-year
Florida Institute of Technology	Both 2-year and 4-year
Fox Valley Technical College	2-year
Inter America U of Puerto Rico	4-year
Kansas State University Salina	Both 2-year and 4-year
LeTourneau University	4-year
Louisiana Tech University	Both 2-year and 4-year
Middle Tennessee State Univ.	4-year
Purdue University	4-year
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	4-year
St. Louis University	4-year
The Ohio State University	4-year
University of North Dakota	4-year
University of Oklahoma	4-year
University of Omaha	4-year

Please identify what degree programs are AABI accredited.

Auburn University	Aviation management, Professional Flight
Aviator Col of Aero Sci & Tech	

Basic Information/Use of Data/Tuition

Embry-Riddle Aeronautical Univ.	B.S. in Aeronautical Science B.S. in Aviation Maintenance Science B.S. in Air Traffic Management B.S. in Aeronautics B.S. in Unmanned Aircraft Systems Science B.S. in Aviation Business Administration M.S. in Aviation Ph.D. in Aviation
Florida Institute of Technology	Professional Pilot, Aviation Studies, and Aviation Management
Fox Valley Technical College	
Inter America U of Puerto Rico	Flight Education and Aviation Management
Kansas State University Salina	B.S. Aeronautical Technology – Professional Pilot
LeTourneau University	
Louisiana Tech University	B.S. Professional Aviation and B.S. Aviation Management.
Middle Tennessee State Univ.	BS - Professional Pilot, Aviation Management, UAS Operations, Aviation Maintenance Management, Flight Dispatch, Aerospace Technology MS - Aeronautics
Purdue University	Aviation Management Professional Flight
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	Professional Pilot B.S.
St. Louis University	Aviation Management and Flight Science (Flight Education)
The Ohio State University	Professional Pilot, Aviation Studies, and Aviation Management
University of North Dakota	Commercial Aviation (flight education) Air Traffic Management UAS
University of Oklahoma	Professional Pilot, Aviation Management--Flying Track, Aviation Management--Non Flying Track, Air Traffic Management.

Basic Information/Use of Data/Tuition

University of Omaha	BS in Aviation with a concentration in Airport Administration

Identify any organizations (other than AABI) by which your institution is accredited.

Auburn University	Southern Association of Colleges and Schools Commission on Colleges (SACSCOC);
Aviator Col of Aero Sci & Tech	ACCSC;
Embry-Riddle Aeronautical Univ.	Southern Association of Colleges and Schools Commission on Colleges (SACSCOC)
Florida Institute of Technology	Southern Association of Colleges and Schools Commission on Colleges (SACSCOC)
Fox Valley Technical College	Higher Learning Commission (HLC);FAA;
Inter America U of Puerto Rico	Middle States Commission on Higher Education (MSCHE);
Kansas State University Salina	Higher Learning Commission (HLC)
LeTourneau University	Southern Association of Colleges and Schools Commission on Colleges (SACSCOC);FAA;
Louisiana Tech University	Southern Association of Colleges and Schools Commission on Colleges (SACSCOC);
Middle Tennessee State Univ.	Southern Association of Colleges and Schools Commission on Colleges (SACSCOC)
Purdue University	0
Sch. of Missionary Av. Tech	ACCET
Southeastern Ok. State Univ.	Higher Learning Commission (HLC);
St. Louis University	Higher Learning Commission (HLC);
The Ohio State University	Higher Learning Commission (HLC);
University of North Dakota	Higher Learning Commission (HLC);
University of Oklahoma	Higher Learning Commission (HLC);
University of Omaha	Higher Learning Commission (HLC);

Does your institution administer flight training directly, contract it to a separate organization, or both?

University of Omaha	Contracted to another organization
All Others	Directly

What certificates and ratings are completed through a separate contracted flight training organization?

University of Omaha	Private Pilot Certificate;Instrument Rating;Commercial Pilot Certificate;Multi-engine Rating;Flight Instructor Certificate;

What organization(s) do you contract training to?

Basic Information/Use of Data/Tuition

University of Omaha	Local Flight Training Providers complete the flight portion of out program

Do you (or your contracted provider) conduct training under part 61 or part 141?

Auburn University	Part 141 only
Aviator Col of Aero Sci & Tech	Both part 61 and part 141
Embry-Riddle Aeronautical Univ.	Part 141 only
Florida Institute of Technology	Both part 61 and part 141
Fox Valley Technical College	Both part 61 and part 141
Inter America U of Puerto Rico	Both part 61 and part 141
Kansas State University Salina	Part 141 only
LeTourneau University	Both part 61 and part 141
Louisiana Tech University	Part 141 only
Middle Tennessee State Univ.	Both part 61 and part 141
Purdue University	Both part 61 and part 141
Sch. of Missionary Av. Tech	Both part 61 and part 141
Southeastern Ok. State Univ.	Yes
St. Louis University	Part 141 only
The Ohio State University	Both part 61 and part 141
University of North Dakota	Part 141 only
University of Oklahoma	Both part 61 and part 141
University of Omaha	Part 141 only

Do you conduct training for any certificates or ratings under part 61 only? If so, please identify them.

Auburn University	
Aviator Col of Aero Sci & Tech	
Embry-Riddle Aeronautical Univ.	
Florida Institute of Technology	Multi-engine Flight Instructor
Fox Valley Technical College	Flight Instructor Certificate;Flight Instructor Instrument Rating;Multi-engine Flight Instructor;

Basic Information/Use of Data/Tuition

Inter America U of Puerto Rico	Multi-engine Rating;Flight Instructor Certificate;Flight Instructor Instrument Rating;Multi-engine Flight Instructor;
Kansas State University Salina	
LeTourneau University	Flight Instructor Certificate;Flight Instructor Instrument Rating;Multi-engine Flight Instructor;
Louisiana Tech University	
Middle Tennessee State Univ.	Commercial Pilot Certificate; Multi-engine Rating; Flight Instructor Instrument Rating; Multi-engine Flight Instructor;
Purdue University	Private Pilot Certificate; Multi-engine Rating;
Sch. of Missionary Av. Tech	Commercial Pilot Certificate;
Southeastern Ok. State Univ.	
St. Louis University	
The Ohio State University	Flight Instructor Certificate; Flight Instructor Instrument Rating; Multi-engine Flight Instructor;
University of North Dakota	
University of Oklahoma	Flight Instructor Instrument Rating;Multi-engine Flight Instructor;
University of Omaha	

Do you have examining authority under part 141?

Auburn University	Yes
Aviator Col of Aero Sci & Tech	No
Embry-Riddle Aeronautical Univ.	Yes
Florida Institute of Technology	Yes
Fox Valley Technical College	Yes
Inter America U of Puerto Rico	No
Kansas State University Salina	No
LeTourneau University	Yes
Louisiana Tech University	No
Middle Tennessee State Univ.	No
Purdue University	No
Sch. of Missionary Av. Tech	No

Basic Information/Use of Data/Tuition

Southeastern Ok. State Univ.	Yes
St. Louis University	No
The Ohio State University	Yes
University of North Dakota	Yes
University of Oklahoma	Yes
University of Omaha	No

For which certificates/ratings do you have examining authority?

Auburn University	Private Pilot Certificate;Instrument Rating;Commercial Pilot Certificate;Multi-engine Rating;Flight Instructor Certificate;Flight Instructor Instrument Rating;Multi-engine Flight Instructor;
Embry-Riddle Aeronautical Univ.	
Florida Institute of Technology	
Fox Valley Technical College	Private Pilot Certificate;Instrument Rating;Commercial Pilot Certificate;
LeTourneau University	Private Pilot Certificate;Instrument Rating;
Southeastern Ok. State Univ.	
The Ohio State University	
University of North Dakota	
University of Oklahoma	Private Pilot Certificate;Instrument Rating;Commercial Pilot Certificate;Multi-engine Rating;Flight Instructor Certificate;

Is your organization authorized by the FAA to certify graduates for an Airline Transport Pilot Certificate with Reduced Aeronautical Experience (R-ATP)?

All Respondents	Yes

Are any of your degree programs offered solely via distance learning for academic education while using external flight training providers to complete the required flight training?

Fox Valley Technical College	Yes
All Others	No

Are any such programs approved for R-ATP qualification?

Fox Valley Technical College	No

Do you partner with or extend outreach to primary/secondary schools, trade schools, or Career and Technical Education schools providing potential students?

Auburn University	No.

Basic Information/Use of Data/Tuition

Aviator Col of Aero Sci & Tech	Host Open Houses for High Schools in 100 mile radius
Embry-Riddle Aeronautical Univ.	We have a high school programs where students receive ERAU academic credit in 140 schools (and growing). https://erau.edu/gaetz-aerospace-institute We also offer a free online course www.Aviation101.org
Florida Institute of Technology	No.
Fox Valley Technical College	Yes - extensive K-12 outreach
Inter America U of Puerto Rico	Yes, we have an awarded grant form The JetBlue Foundation where we expose high school students to aviation. We also host OBAP activities in our Institution.
Kansas State University Salina	High schools in regional districts
LeTourneau University	Dual credit high school classes
Louisiana Tech University	No
Middle Tennessee State Univ.	Yes, we have dual credit agreements with 7 high schools in TN.
Purdue University	Yes, Purdue Polytechnic High Schools, Lafayette Career Academy
Sch. of Missionary Av. Tech	Yes, we provide recruiting information and conduct presentations at primary and secondary schools, trade schools, career technical training institutes and a local aviation-focused high school.
Southeastern Ok. State Univ.	Our local outreach is with Durant ISD using the AOPA You Can Fly Stem curriculum
St. Louis University	We extend outreach to many of the St. Louis area schools.
The Ohio State University	Several local school districts use our facilities to teach course that count toward collegiate credit in aviation in Ohio.
University of North Dakota	Yes, Aviation class in local high school,
University of Oklahoma	Partnership with the Oklahoma Avaition Academy (High School) and Moore/Norman Votech. We also have our own Sooner Flight Academy, a K-12 year round progoram to create interest in aviation careers
University of Omaha	Yes, we are affiliated with a local high school to complete up to and include a PPL.

Do you partner with or otherwise coordinate efforts with any air carriers or operators as potential employers of graduates? (E.g., through affiliation with airline cadet programs, establishment of an employment pipeline, etc.)

Auburn University	Yes. Envoy, Delta Propel, United Aviate, Southwest 225
Aviator Col of Aero Sci & Tech	Yes through affiliation with airline cadet programs, establishment of an employment pipeline and host airline visits every sememster
Embry-Riddle Aeronautical Univ.	Yes, we have programs with almost every regional airline and most majors. In addition we have programs with corporate flight departments and cargo.

Basic Information/Use of Data/Tuition

Florida Institute of Technology	Yes - United Aviate, Endeavor, and Envoy.
Fox Valley Technical College	Yes - assist grads and CFIs to gain employment with various operators
Inter America U of Puerto Rico	JetBlue Cadet Delta Propel
Kansas State University Salina	No
LeTourneau University	Cadet programs with SkyWest and Envoy
Louisiana Tech University	Yes, Southwest, United and AFROTC
Middle Tennessee State Univ.	Yes, Delta Propel; informal agreements with Republic, Endeavor, Envoy for recruiting on campus/sponsoring events
Purdue University	Yes, multiple pathways programs
Sch. of Missionary Av. Tech	We do not partner with aviation employers, but we certainly coordinate and cooperate with any job postings they have. Additionally, we make space and time for aviation companies to make presentations to our students regarding future employment opportunities.
Southeastern Ok. State Univ.	Destination 225 (Southwest Airlines), Envoy, Propel (Delta Airlines)
St. Louis University	Affiliations with Republic Airways, Mesa Airlines, and Envoy.
The Ohio State University	We have partnerships with United Airline, Republic Air Ways, PSA, Endeavour, and Envoy
University of North Dakota	Yes, many full list can be found on website
University of Oklahoma	Yes, we have partnerships with SouthWest, Envoy, Republic and PSA
University of Omaha	Yes, we have cadet pathway programs with United, Southwest, Envoy and Republic

What class of airspace is your primary training facility located in?

Auburn University	Class G
Aviator Col of Aero Sci & Tech	Class D
Embry-Riddle Aeronautical Univ.	Class C
Florida Institute of Technology	Class D
Fox Valley Technical College	Class D
Inter America U of Puerto Rico	Class D
Kansas State University Salina	Class D

Basic Information/Use of Data/Tuition

LeTourneau University	Class D
Louisiana Tech University	Class E
Middle Tennessee State Univ.	Class E
Purdue University	Class D
Sch. of Missionary Av. Tech	Class D
Southeastern Ok. State Univ.	Class G
St. Louis University	Class B
The Ohio State University	Class D
University of North Dakota	Class D
University of Oklahoma	Class D
University of Omaha	Class C

USE OF DATA

Do you collect FDM/FOQA/FTD data as part of your training program?

Auburn University	
Aviator Col of Aero Sci & Tech	No
Embry-Riddle Aeronautical Univ.	Yes. Data is transmitted via cell tower after each flight. The data is used for training/debrief, MOQA and FOQA. Students can view their flight immediately after each flight and the link to the flight remains in their training record. We have used data on the MOQA/FOQA side since 2005. It has lead to many improvements in training, aircraft operation as well as maintenance troubleshooting.
Florida Institute of Technology	Not at present.
Fox Valley Technical College	Yes
Inter America U of Puerto Rico	no
Kansas State University Salina	No
LeTourneau University	
Louisiana Tech University	No.
Middle Tennessee State Univ.	We are in the infancy of analyzing flight data through the NGAFID.
Purdue University	investigations

Basic Information/Use of Data/Tuition

Sch. of Missionary Av. Tech	No
Southeastern Ok. State Univ.	no
St. Louis University	
The Ohio State University	Yes, but only when an incident is reported.
University of North Dakota	Yes, capture data from G1000, have safety analysis team that use software
University of Oklahoma	Not formally as we have tools like Flight Aware, etc to collect this data. We do use it to confirm student training paramaters, mainly for solo flight.
University of Omaha	no

Do you collect identified training data on students or instructors?

Auburn University	
Aviator Col of Aero Sci & Tech	No
Embry-Riddle Aeronautical Univ.	Yes. the data is paired with student records in CloudAhoy for debrief. The raw data is not available to students/instructors but they can see their flights in the system. Safety controls the actual data and we have a process for management to request data for investigation, study or process improvements.
Florida Institute of Technology	Currently only on the instructor side as part of their professional development. We collect their pass rates, and use these as tools to show where improvements may be needed and make plans on how to gain that improvement.
Fox Valley Technical College	Yes/No. Identify trends as part of SMS and continuous improvement efforts.
Inter America U of Puerto Rico	no
Kansas State University Salina	Yes, we use it to track student progress and identify when a student is struggling
LeTourneau University	Annual evaluation of instructors for stage check pass rate.
Louisiana Tech University	Yes. Percentage of students passing by their instructor.
Middle Tennessee State Univ.	We are also in the infancy of establishing a quality management program which will collect/use such data.
Purdue University	Yes Cloud Ahoy Data, used in debrief
Sch. of Missionary Av. Tech	No
Southeastern Ok. State Univ.	pass rates for determining qualifications for stage check instructor and senior status.
St. Louis University	
The Ohio State University	All student records are stored within a learning management system.
University of North Dakota	In management system, not through flight data

Basic Information/Use of Data/Tuition

University of Oklahoma	Yes, we use this to determine effectiveness of instruction and compatibility of instructor and student.
University of Omaha	no

TUITION/COSTS

What is the advertised cost of completing your training program? (That is, what cost is quoted to propective students or stated in marketing/advertising materials, if any?)

Auburn University	
Aviator Col of Aero Sci & Tech	Too many variation to list here we have all published on our website www.aviator.edu
Embry-Riddle Aeronautical Univ.	Assume you mean flight courses and not tuition - $84,363
Florida Institute of Technology	
Fox Valley Technical College	Approx. $85k
Inter America U of Puerto Rico	$109,861.50
Kansas State University Salina	https://www.salina.k-state.edu/admissions/tuition-scholarships-financial-aid/documents/aviation-costs.pdf
LeTourneau University	$65,000
Louisiana Tech University	$65,000, quoted at $72 to $75K due to increase maintenance costs.
Middle Tennessee State Univ.	
Purdue University	63,392 AT 14500 - Private Pilot Flight Piper Archer $13,686.00 AT 25302 - Instrument Flight Piper Archer $11,564.00 AT 24302 - Commercial Flight I Piper Archer $11,139.00 AT 24802 - Commercial Flight II Piper Archer $11,139.00 AT 35300 - Multi-Engine Flight Seminole $4,193.00 AT 21000 - Ground Trainer I $3,077.00 AT 21100 - Ground Trainer II $3,077.00 AT 38700 - Turbine Aircraft Simulation Lab $2,334.00 AT 48700 - Transport Aircraft Simulation Lab $3,183.00
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	$124,000
St. Louis University	
The Ohio State University	$80,000
University of North Dakota	
University of Oklahoma	See https://www.ou.edu/ags/aviation for breakdown
University of Omaha	In addition to tuition, we let students know that they will spend $40-60K in flight training costs. This will depend on their ability to progress through the program

Basic Information/Use of Data/Tuition

What is the typical/average actual cost to students completing your training program?

Auburn University	
Aviator Col of Aero Sci & Tech	most students finish within the advertised cost on our website
Embry-Riddle Aeronautical Univ.	$84,363 is the median
Florida Institute of Technology	
Fox Valley Technical College	Approx. $85k
Inter America U of Puerto Rico	$119,031.50
Kansas State University Salina	https://www.salina.k-state.edu/admissions/tuition-scholarships-financial-aid/documents/aviation-costs.pdf
LeTourneau University	$75,000
Louisiana Tech University	see 19.
Middle Tennessee State Univ.	
Purdue University	$63,392
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	$132,000
St. Louis University	
The Ohio State University	$90,000
University of North Dakota	
University of Oklahoma	See https://www.ou.edu/ags/aviation for breakdown
University of Omaha	APPROXIMATE FLIGHT TRAINING COST Private Pilot Lab $3,000 (AVN 1024) Private Pilot Certificate $4,500 (AVN 1030) Instrument Rating $8,000 (AVN 2104, 2114) Commercial Certificate $15,000 (AVN 2124, 2134, 2144) Multi-Engine $4,800 (AVN 3400) CFI $4,700 (AVN 3194) Total $40,000*

USE OF INFORMATION

Can all information you supply on this form be included in the ACT ARC's public report to the Federal Aviation Administration?

Auburn University	
Aviator Col of Aero Sci & Tech	Yes
Embry-Riddle Aeronautical Univ.	Yes
Florida Institute of Technology	Yes

Basic Information/Use of Data/Tuition

Fox Valley Technical College	Yes
Inter America U of Puerto Rico	Yes
Kansas State University Salina	Yes
LeTourneau University	Yes
Louisiana Tech University	Yes
Middle Tennessee State Univ.	Yes
Purdue University	Yes
Sch. of Missionary Av. Tech	Yes
Southeastern Ok. State Univ.	Yes
St. Louis University	
The Ohio State University	Yes
University of North Dakota	Yes
University of Oklahoma	Yes
University of Omaha	Yes

Would you/your organization be amenable to speaking with the P3 Workgroup in person or virtually?

Auburn University	
Aviator Col of Aero Sci & Tech	Yes
Embry-Riddle Aeronautical Univ.	Yes
Florida Institute of Technology	
Fox Valley Technical College	Yes
Inter America U of Puerto Rico	No
Kansas State University Salina	
LeTourneau University	Yes
Louisiana Tech University	No
Middle Tennessee State Univ.	
Purdue University	Yes

Basic Information/Use of Data/Tuition

Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	Yes
St. Louis University	
The Ohio State University	
University of North Dakota	
University of Oklahoma	Yes
University of Omaha	Yes

Quantitative Information

Approximately how many of your students enter your program with a Private Pilot certificate?

Auburn University	50-75%
Aviator Col of Aero Sci & Tech	<10%
Embry-Riddle Aeronautical Univ.	0
Florida Institute of Technology	25-50%
Fox Valley Technical College	10-25%
Inter America U of Puerto Rico	<10%
Kansas State University Salina	<10%
LeTourneau University	<10%
Louisiana Tech University	10-25%
Middle Tennessee State Univ.	25-50%
Purdue University	0
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	0
St. Louis University	<10%
The Ohio State University	10-25%
University of North Dakota	25-50%
University of Oklahoma	10-25%
University of Omaha	10-25%

Approximately how much total aeronautical experience (flight hours and FSTD hours) do your students have, on average, when they obtain their Private Pilot Certificate (if applicable)?

Auburn University	75-90 hours
Aviator Col of Aero Sci & Tech	50-75 hours
Embry-Riddle Aeronautical Univ.	>90 hours
Florida Institute of Technology	75-90 hours

Quantitative Information

Fox Valley Technical College	50-75 hours
Inter America U of Puerto Rico	50-75 hours
Kansas State University Salina	50-75 hours
LeTourneau University	75-90 hours
Louisiana Tech University	75-90 hours
Middle Tennessee State Univ.	50-75 hours
Purdue University	50-75 hours
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	50-75 hours
St. Louis University	50-75 hours
The Ohio State University	50-75 hours
University of North Dakota	0
University of Oklahoma	50-75 hours
University of Omaha	50-75 hours

Approximately how much total aeronautical experience (flight hours and FSTD hours) do your students have, on average, when they obtain their Commercial Pilot Certificate?

Auburn University	240-260 hours
Aviator Col of Aero Sci & Tech	200-220 hours
Embry-Riddle Aeronautical Univ.	220-240 hours
Florida Institute of Technology	220-240 hours
Fox Valley Technical College	220-240 hours
Inter America U of Puerto Rico	220-240 hours
Kansas State University Salina	225-250 hours
LeTourneau University	190-200 hours
Louisiana Tech University	190-200 hours

Quantitative Information

Middle Tennessee State Univ.	190-200 hours
Purdue University	200-220 hours
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	200-220 hours
St. Louis University	200-220 hours
The Ohio State University	220-240 hours
University of North Dakota	0
University of Oklahoma	200-220 hours
University of Omaha	200-220 hours

Approximately how much total aeronautical experience (flight hours and FSTD hours) do your students have, on average, when they obtain their Instrument Rating?

Auburn University	125-150 hours
Aviator Col of Aero Sci & Tech	80-100 hours
Embry-Riddle Aeronautical Univ.	150-175 hours
Florida Institute of Technology	150-175 hours
Fox Valley Technical College	80-100 hours
Inter America U of Puerto Rico	100-125 hours
Kansas State University Salina	125-150 hours
LeTourneau University	125-150 hours
Louisiana Tech University	80-100 hours
Middle Tennessee State Univ.	100-125 hours
Purdue University	80-100 hours
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	100-125 hours
St. Louis University	100-125 hours

Quantitative Information

The Ohio State University	150-175 hours
University of North Dakota	0
University of Oklahoma	150-175 hours
University of Omaha	70-80 hours

Approximately how much total aeronautical experience (flight hours and FSTD hours) do your students have, on average, when they obtain their Multi-engine Rating?

Auburn University	225-250 hours
Aviator Col of Aero Sci & Tech	225-250 hours
Embry-Riddle Aeronautical Univ.	250-275 hours
Florida Institute of Technology	200-225 hours
Fox Valley Technical College	225-250 hours
Inter America U of Puerto Rico	225-250 hours
Kansas State University Salina	250-275 hours
LeTourneau University	180-200 hours
Louisiana Tech University	225-250 hours
Middle Tennessee State Univ.	180-200 hours
Purdue University	200-225 hours
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	220-250 hours
St. Louis University	180-200 hours
The Ohio State University	250-275 hours
University of North Dakota	0
University of Oklahoma	225-250 hours
University of Omaha	275-300 hours

Quantitative Information

Do any extenuating or environmental factors affect your responses to the previous four questions?

Auburn University	0
Aviator Col of Aero Sci & Tech	Florida weather allows for consistent delivery of flight training year over year with an occasional pause for a hurricane
Embry-Riddle Aeronautical Univ.	Yes. Students have long wait times at DAB airport and have to plan 20 minutes of ground time and 20 minutes of airspace transition time in class c (arrival and departure). 40 minutes total for each flight. This increases total time in course. Airspace is limited as well as we are on a coast line. Ground reference fields are limited and getting less available (growing population and noise complaints). We have no east practice area due to ocean. We have limited runway capacity at outlying fields due to capacity.
Florida Institute of Technology	Covid and weather (winds mainly) have attributed to delays.
Fox Valley Technical College	0
Inter America U of Puerto Rico	Pandemic-related training delays, shortage of AMTs and DPEs have impacted our graduation rates.
Kansas State University Salina	0
LeTourneau University	0
Louisiana Tech University	Outliers for PP Certificate are up to 140 hours. These are mainly VA students, not focused on the money they are spending.
Middle Tennessee State Univ.	No extraneous factors
Purdue University	none
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	No
St. Louis University	0
The Ohio State University	Airline hiring of flight instructors decreases the amount of students we can admit, and forces the remaining CFI's to work with more students, thereby decreasing efficiency.
University of North Dakota	0
University of Oklahoma	0
University of Omaha	0

Approximately what percentage of your students obtain a flight instructor certificate?

Quantitative Information

Auburn University	<10%
Aviator Col of Aero Sci & Tech	50-75%
Embry-Riddle Aeronautical Univ.	50-75%
Florida Institute of Technology	25-50%
Fox Valley Technical College	90-99%
Inter America U of Puerto Rico	100%
Kansas State University Salina	50-75%
LeTourneau University	50-75%
Louisiana Tech University	100%
Middle Tennessee State Univ.	50-75%
Purdue University	0
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	100%
St. Louis University	50-75%
The Ohio State University	90-99%
University of North Dakota	0
University of Oklahoma	90-99%
University of Omaha	100%

Approximately what percentage of your students do you hire as flight instructors, either while they are enrolled or after program completion?

Auburn University	<10%
Aviator Col of Aero Sci & Tech	75-90%
Embry-Riddle Aeronautical Univ.	50-75%
Florida Institute of Technology	10-25%
Fox Valley Technical College	75-90%

Quantitative Information

Inter America U of Puerto Rico	75-90%
Kansas State University Salina	0
LeTourneau University	10-25%
Louisiana Tech University	75-90%
Middle Tennessee State Univ.	25-50%
Purdue University	50-75%
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	75-90%
St. Louis University	0
The Ohio State University	90-99%
University of North Dakota	0
University of Oklahoma	90-99%
University of Omaha	90-99%

What is the approximate distribution of Single- and Multi-engine flight hours for students completing your program?

Auburn University	10-15% multi / 85-90% single-engine
Aviator Col of Aero Sci & Tech	10-15% multi / 85-90% single-engine
Embry-Riddle Aeronautical Univ.	>15% multi / <85% single-engine
Florida Institute of Technology	10-15% multi / 85-90% single-engine
Fox Valley Technical College	10-15% multi / 85-90% single-engine
Inter America U of Puerto Rico	10-15% multi / 85-90% single-engine
Kansas State University Salina	0
LeTourneau University	10-15% multi / 85-90% single-engine
Louisiana Tech University	100% single-engine
Middle Tennessee State Univ.	5-10% multi / 90-95% single-engine

Quantitative Information

Purdue University	<5% multi / >95% single-engine
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	0
St. Louis University	5-10% multi / 90-95% single-engine
The Ohio State University	5-10% multi / 90-95% single-engine
University of North Dakota	0
University of Oklahoma	10-15% multi / 85-90% single-engine
University of Omaha	<5% multi / >95% single-engine

What is the distribution of aircraft and simulator time for students completing your program?

Auburn University	15-20% simulator / 80-85% aircraft
Aviator Col of Aero Sci & Tech	15-20% simulator / 80-85% aircraft
Embry-Riddle Aeronautical Univ.	>15% multi / <85% single-engine
Florida Institute of Technology	10-15% simulator / 85-90% aircraft
Fox Valley Technical College	5-10% simulator / 90-95% aircraft
Inter America U of Puerto Rico	20-25% simulator / 75-80% aircraft
Kansas State University Salina	10-15% simulator / 85-90% aircraft
LeTourneau University	20-25% simulator / 75-80% aircraft
Louisiana Tech University	5-10% simulator / 90-95% aircraft
Middle Tennessee State Univ.	<5% simulator / >95% aircraft
Purdue University	>15% multi / <85% single-engine
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	5-10% simulator / 90-95% aircraft
St. Louis University	5-10% simulator / 90-95% aircraft
The Ohio State University	10-15% simulator / 85-90% aircraft

Quantitative Information

University of North Dakota	
University of Oklahoma	10-15% simulator / 85-90% aircraft
University of Omaha	<5% simulator / >95% aircraft

Approximately what percentage of your students are international students (i.e., permanent residents of a country other than the US, and will most likely seek employment outside the US after completing training)?

Auburn University	<5%
Aviator Col of Aero Sci & Tech	40-50%
Embry-Riddle Aeronautical Univ.	20-30%
Florida Institute of Technology	
Fox Valley Technical College	<5%
Inter America U of Puerto Rico	5-10%
Kansas State University Salina	5-10%
LeTourneau University	5-10%
Louisiana Tech University	<5%
Middle Tennessee State Univ.	
Purdue University	<5%
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	<5%
St. Louis University	<5%
The Ohio State University	5-10%
University of North Dakota	
University of Oklahoma	<5%
University of Omaha	<5%

Quantitative Information

How many total aircraft are in your training fleet?

Auburn University	50
Aviator Col of Aero Sci & Tech	50
Embry-Riddle Aeronautical Univ.	99
Florida Institute of Technology	
Fox Valley Technical College	10
Inter America U of Puerto Rico	11
Kansas State University Salina	30
LeTourneau University	17
Louisiana Tech University	13
Middle Tennessee State Univ.	45
Purdue University	24
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	19
St. Louis University	15
The Ohio State University	20
University of North Dakota	~100
University of Oklahoma	28
University of Omaha	0

State how many of each of the following aircraft are available for student training:	Glider	High Performance	Multi-engine Complex	Single-engine	Technically Advanced Airplanes	Other (please identify)
Auburn University	0	0	5	45	50	0
Aviator Col of Aero Sci & Tech	0	1	7	42	10	0

Quantitative Information

Embry-Riddle Aeronautical Univ.	0	0	12	87	99	0
Florida Institute of Technology						
Fox Valley Technical College	0	0	3	7	7	0
Inter America U of Puerto Rico	0	0	2	8	2	none
Kansas State University Salina	0	8	2	28	27	0
LeTourneau University	0	1	2	15	4	9 tailwheel
Louisiana Tech University	0	0	0	13	2	0
Middle Tennessee State Univ.	0	0	5	40	0	0
Purdue University	1	0	3	22	3	Super Decathalon
Sch. of Missionary Av. Tech						
Southeastern Ok. State Univ.	0	2	2	15	4	0
St. Louis University	0	0	2	13	4	0
The Ohio State University	0	1	1	19	10	0
University of North Dakota						
University of Oklahoma	0	3	4	24	11	We have one Turbo Prop (King Air)
University of Omaha						

State how many of each of the following ground training devices are available for student training:	Virtual Reality (VR) devices	Basic Aviation Training Devices (BATD)	Advanced Aviation Training Devices (AATD)	Level 5 Flight Training Devices (FTDs)	Level 6 FTDs	Level 7 FTDs	Full Flight Simulators (FFS)	Other (please identify)
Auburn University	0	0	9	0	0	0	0	0
Aviator Col of Aero Sci & Tech	0	0	4	1	0	0	0	0

Quantitative Information

Embry-Riddle Aeronautical Univ.	26	2	15	4	9	0	1	2 cross-wind procedure trainers
Florida Institute of Technology								
Fox Valley Technical College	0	0	4	0	0	0	0	0
Inter America U of Puerto Rico	0	3	1	0	0	0	0	none
Kansas State University Salina	0	0	9	0	0	0	0	0
LeTourneau University	0	2	6	0	0	0	0	0
Louisiana Tech University	0	0	2	0	0	0	0	0
Middle Tennessee State Univ.	0	0	2	2	0	0	0	0
Purdue University	4	1	8	2	0	0	1	0
Sch. of Missionary Av. Tech								
Southeastern Ok. State Univ.	0	0	1	0	0	0	0	1 B737 Max fixed-base procedure trainer
St. Louis University	0	1	5	0	0	0	0	0
The Ohio State University	2	0	0	3	0	0	0	0
University of North Dakota	0							
University of Oklahoma	0	2	2	0	0	0	0	0
University of Omaha	0	0	2	1	0	0	0	0

Qualitative Information

Please describe/summarize your selection process/admission standards.

Auburn University	
Aviator Col of Aero Sci & Tech	Must pass entrance exam and interview
Embry-Riddle Aeronautical Univ.	Our admissions folks handle this; normal academic standards apply. High school GPA, SAT/ACT scores, etc. Admission committee looks for extra curricular activity as well. We try to quantify commitment and grit as that is what is needed to be successful in flight training. Our acceptance rate for Fall 2023 is 55% of the applicants.
Florida Institute of Technology	Admission is handled by Florida Institute of Technology and goes with admission for the degree program.
Fox Valley Technical College	Open enrollment institution - first come first serve.
Inter America U of Puerto Rico	Professional Pilot: 2.5 high school gpa 475 on Math (PAA or SAT equivalent) 490 English (PAA or SAT equivalent) Panel Interview First-Class Medical Aviation Mangement all of the above except medical certificate and 2.0 high school gpa
Kansas State University Salina	Admission to the university is test-optional and requires achieving: A cumulative high school GPA (weighted or unweighted) of 3.25 or higher OR ACT composite score of 21, or an SAT ERW+M score of 1060 or higher AND, if applicable, achieve a 2.0 GPA on all college credit taken in high school.
LeTourneau University	Submit application to university.
Louisiana Tech University	23 ACT (or SAT Equivalent), GPA 3.0 or better, and campus visit by 15 Jan. We take the top percentage of applicants based on graduations/drop outs from previous year.
Middle Tennessee State Univ.	The university minimum requirements for admission are also the admission requirement to the department, however, students must maintain at least a 3.0 GPA to qualify for a flight lab.
Purdue University	University admission standards

Qualitative Information

Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	Complete application process after University acceptance. Use Faculty selection committee.
St. Louis University	Solid academic performance in college preparatory coursework is a primary consideration when we review freshman applications. To be considered for admission, applicant must be graduating from high school, have an acceptable HiSET exam score or take the General Education Development (GED) test.
The Ohio State University	Ohio State develops the enrolment standards for the University, and our program uses a direct admit to major system. Our Professional Pilot courses are separate from the major and are included within a specialization. A student does not have to learn to fly in order to graduate from an aviation major. For those students that do want to pursue the pilot specialization, we utilize class rank, and academic GPA as a determination of who is selected for the specialization.
University of North Dakota	This is changing as we are now more selective.
University of Oklahoma	Students must meet University of Oklahoma addmissions standards and will recieve a flying slot on a first come, first served basis. We do not give preference for students with a private pilot cetificate.
University of Omaha	

What makes your training program unique?

Auburn University	Professional aviation oriented. Not here just for provide for pilot certification.
Aviator Col of Aero Sci & Tech	We offer a blended 2 yr Aeronautical Science degree with ab-initio pilot training form zero to CFI,CFII and MEI
Embry-Riddle Aeronautical Univ.	We invest heavily to ensure that our students receive the the best available training using the best resources, technology, and educational practices. Our students performance in the industry is our brand recognition and we do everything possible to ensure our program prepares them appropriately.
Florida Institute of Technology	No delay in beginning training, start flight courses within days of registering.
Fox Valley Technical College	141 R-ATP Commercial-ASEL/AMEL/Instrument & CFI-ASEL/AMEL/Instrument (+95% first time test pass rate) Associate Degree for under $90k
Inter America U of Puerto Rico	Caribbean Flying, island hopping, international airspace, dual language (spanish and english)
Kansas State University Salina	Premium fleet of 30+ aircraft; located adjacent to the Salina Regional Airport providing students a 12,300-foot runway - one of the longest in the country - as their training facility. The property is also home to crosswind and parallel runways.
LeTourneau University	Private Pilot training in tailwheel airplanes.
Louisiana Tech University	Quality focus on training and milestones to completion. Quantity was not a factor.

Qualitative Information

Middle Tennessee State Univ.	Our program is very cost effective both in terms of tuition and flight training fees, so we are able to attract a number of students who would not be able to afford pursuing an undergraduate aviation degree otherwise. We have a lot of first generation college students, the highest concentration of veteran students of any department on campus, and a good representation of Pell grant eligible students. Being able to make an aviation career accessible to these demographics is one of our values. We are also able to offer two senior-level turbine operations transition courses with both class and lab components (lab in CRJ900 FTD's) that result in our graduates being very well-prepared for regional air carrier initial training.
Purdue University	50 hours of turbine transition program B737, A320, Hawker 900 XP FFS
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	Evolving Cockpit Training Methodology. Start training in 6 pack 172, go to Cirrus TRAC, then to G1000 Seminole, complete in B737 Max FBPT
St. Louis University	Founded in 1927, Saint Louis University's Oliver L. Parks Department of Aviation Science holds the first federally certified flight certificate in the country. Today, Saint Louis University is the only Jesuit university with a flight program, making us a premier institution for flight education. This Jesuit heritage means students learn to make ethical decisions that contribute to their personal and professional goals and allow them to enrich the community in which students live and work.
The Ohio State University	Our program has been training pilots for over 100 years, and we operate our own airport. Our University is one of the largest in the country, and students have the opportunity to explore interests and take classes in a broad range of disciplines.
University of North Dakota	Four seasons of flying! Professional aviation degree with classes above and beyond basic certification
University of Oklahoma	The university owns and operates the airport, which is only 10 minutes from the main campus. We have complete examining authority and our own maintenance. We also guarantee that all of our admited students will start lfying thier freshmen year. Our job placement for our pilots is 97%
University of Omaha	0

Does your organization offer an ATP/CTP course?

Embry-Riddle Aeronautical Univ.	Yes
All Other Respondents (17)	No

Do you provide Upset Prevention and Recovery Training (UPRT) as part of your training program?

Auburn University	No
Aviator Col of Aero Sci & Tech	Yes
Embry-Riddle Aeronautical Univ.	Yes
Florida Institute of Technology	No

Qualitative Information

Fox Valley Technical College	No
Inter America U of Puerto Rico	No
Kansas State University Salina	no
LeTourneau University	Yes
Louisiana Tech University	No
Middle Tennessee State Univ.	No
Purdue University	No
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	No
St. Louis University	No
The Ohio State University	No
University of North Dakota	No
University of Oklahoma	Yes
University of Omaha	No

What type of aircraft is used for UPRT?

Aviator Col of Aero Sci & Tech	C172
Embry-Riddle Aeronautical Univ.	This is done in the FFS and VR. We no longer have an upset aircraft.
LeTourneau University	7ECA
University of Oklahoma	C-52 Aerobat

Do you offer a jet transition course in a device that simulates a transport category aircraft?

Auburn University	
Aviator Col of Aero Sci & Tech	Yes
Embry-Riddle Aeronautical Univ.	Yes
Florida Institute of Technology	Yes
Fox Valley Technical College	No
Inter America U of Puerto Rico	No

Qualitative Information

Kansas State University Salina	No
LeTourneau University	No
Louisiana Tech University	No
Middle Tennessee State Univ.	Yes
Purdue University	Yes
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	Yes
St. Louis University	
The Ohio State University	No
University of North Dakota	Yes
University of Oklahoma	Yes
University of Omaha	Yes

Approximately what percentage of students complete a jet transition course?

Aviator Col of Aero Sci & Tech	25-50%
Embry-Riddle Aeronautical Univ.	
Florida Institute of Technology	0
Middle Tennessee State Univ.	100%
Purdue University	
Southeastern Ok. State Univ.	
University of North Dakota	
University of Oklahoma	90-99%
University of Omaha	<10%

What aircraft do you offer a jet transition course for?

Auburn University	
Aviator Col of Aero Sci & Tech	CRJ-200
Embry-Riddle Aeronautical Univ.	

Qualitative Information

Florida Institute of Technology	CRJ-700
Middle Tennessee State Univ.	CRJ-900
Purdue University	Boeing, Hawker, Airbus
Southeastern Ok. State Univ.	B737 Max
University of North Dakota	CRJ
University of Oklahoma	King Air
University of Omaha	737

Does your program include high-altitude training?

Auburn University	
Aviator Col of Aero Sci & Tech	No
Embry-Riddle Aeronautical Univ.	Yes
Florida Institute of Technology	No
Fox Valley Technical College	No
Inter America U of Puerto Rico	No
Kansas State University Salina	No
LeTourneau University	Yes
Louisiana Tech University	No
Middle Tennessee State Univ.	No
Purdue University	No
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	No
St. Louis University	
The Ohio State University	No
University of North Dakota	Yes
University of Oklahoma	Yes
University of Omaha	No

Qualitative Information

Which of the following does your high-altitude training incorporate? (Check all that apply.)

Embry-Riddle Aeronautical Univ.	Academic training; Hypobaric/Normobaric Chamber experience; Simulator training/High-Altitude endorsement;
LeTourneau University	Academic training;Chamber flight at CAMI in OKC;
University of North Dakota	Hypobaric/Normobaric Chamber experience
University of Oklahoma	Academic training;Hypobaric/Normobaric Chamber experience;In aircraft training/exposure

Is high-altitude training a mandatory part of your flight training program?

Embry-Riddle Aeronautical Univ.	Yes
LeTourneau University	Yes
University of North Dakota	Yes
University of Oklahoma	Yes

For what certificates/ratings do students receive high-altitude training? (Check all that apply.)

Embry-Riddle Aeronautical Univ.	
LeTourneau University	Commercial Pilot Certificate;
University of North Dakota	Degree requirement
University of Oklahoma	Other;

Do you use Virtual Reality/Augmented Reality (VR/AR) as part of your training program?

Auburn University	
Aviator Col of Aero Sci & Tech	No
Embry-Riddle Aeronautical Univ.	Yes
Florida Institute of Technology	No
Fox Valley Technical College	No
Inter America U of Puerto Rico	No
Kansas State University Salina	No
LeTourneau University	No
Louisiana Tech University	No
Middle Tennessee State Univ.	no

Qualitative Information

Purdue University	No
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	No
St. Louis University	
The Ohio State University	No
University of North Dakota	Yes
University of Oklahoma	No
University of Omaha	No

Do all students undergo VR/AR training?

Embry-Riddle Aeronautical Univ.	Yes, all students do a 4 week program at the beginning of their private course. They are scheduled for 2 hours in the Preflight Immersion Lab (VR lab) per day, 5 days a week)
University of North Dakota	No

What certificate/rating courses require VR/AR training in the syllabus? (Check all that apply.)

Embry-Riddle Aeronautical Univ.	Private Pilot Certificate;
University of North Dakota	Free for students, not required any certificate

In addition to the preceding questions, does your program include elements or aspects that exceed regulatory requirements?

Auburn University	
Aviator Col of Aero Sci & Tech	
Embry-Riddle Aeronautical Univ.	Yes, airmanship is more important than the minimum training to get certificates and ratings. Our program requirements are designed to exceed the expectations of industry. We use feedback from industry in our instructional design process. Including many "LOFT" style scenarios in our upper level flight courses to build airmanship. On the academic side students get almost 1000 hours of education beyond what is required for FAA certs and ratings. In addition to a normal flight standards department we have a Manager of Quality for Flight Instruction. This manager has a team of instructors (known as mentors) that observe the flight instructor core, they provide feedback for improving of teaching technique and advise flight standards on topics that IPs need more training.
Florida Institute of Technology	No
Fox Valley Technical College	Yes. Simulation. Enhanced SRM/CRM procedures.
Inter America U of Puerto Rico	n/a

Qualitative Information

Kansas State University Salina	
LeTourneau University	Solo night operations for Private Pilot Certificate.
Louisiana Tech University	No.
Middle Tennessee State Univ.	
Purdue University	Yes, turbine transition
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	We require CFI, CFII, and Multi to graduate
St. Louis University	
The Ohio State University	We offer training for the Aircraft Dispatcher certificate, and it is becoming an increasingly popular option for students because the courses also count for RATP credit.
University of North Dakota	Definitely
University of Oklahoma	Our Turbine traning is a requirment for our profesional pilot majors.
University of Omaha	no

Do you have a formal Safety Management System (SMS) that includes a processes to identify hazards, assess risk, develop mitigations and control risk?

Auburn University	
Aviator Col of Aero Sci & Tech	Yes
Embry-Riddle Aeronautical Univ.	Yes
Florida Institute of Technology	Yes
Fox Valley Technical College	Yes
Inter America U of Puerto Rico	No
Kansas State University Salina	Yes
LeTourneau University	Yes
Louisiana Tech University	No
Middle Tennessee State Univ.	Yes
Purdue University	Yes
Sch. of Missionary Av. Tech	

Qualitative Information

Southeastern Ok. State Univ.	Yes
St. Louis University	
The Ohio State University	Yes
University of North Dakota	Yes
University of Oklahoma	Yes
University of Omaha	Yes

Is your SMS approved under 14 CFR part 5?

Aviator Col of Aero Sci & Tech	No
Embry-Riddle Aeronautical Univ.	No
Florida Institute of Technology	Yes
Fox Valley Technical College	No
Kansas State University Salina	
LeTourneau University	No
Middle Tennessee State Univ.	No
Purdue University	No
Southeastern Ok. State Univ.	No
The Ohio State University	Yes
University of North Dakota	Yes
University of Oklahoma	No
University of Omaha	No

Does your organization have a safety director/manager?

Auburn University	
Aviator Col of Aero Sci & Tech	Yes
Embry-Riddle Aeronautical Univ.	Yes
Florida Institute of Technology	Yes
Fox Valley Technical College	Yes

Qualitative Information

Inter America U of Puerto Rico	
Kansas State University Salina	
LeTourneau University	Yes
Louisiana Tech University	
Middle Tennessee State Univ.	Yes
Purdue University	Yes
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	Yes
St. Louis University	
The Ohio State University	Yes
University of North Dakota	Yes
University of Oklahoma	Yes
University of Omaha	No

Does your SMS include promotion and measurement of safety culture?

All Respondents (13)	Yes

Identify any agencies/organizations that have validated your SMS.

Aviator Col of Aero Sci & Tech	EASA;
Embry-Riddle Aeronautical Univ.	International Standard for Business Aircraft Operations (IS-BAO);
Florida Institute of Technology	Wyvern
University of North Dakota	None yet.
University of Oklahoma	AABI;

Do you regularly use SMS processes to monitor and improve flight training? If so, please elaborate.

Aviator Col of Aero Sci & Tech	Required under EASA for EASA training not required under FAA training
Embry-Riddle Aeronautical Univ.	Yes. We have a very mature SMS. Data is used in analysis and decision making. All safety related decisions are completed with a formal risk assessment
Florida Institute of Technology	Yes, to see trends of any mishaps and ensure they are improved upon.

Qualitative Information

Fox Valley Technical College	Yes. All students have a mandatory safety class. We also hold monthly safety meetings with all stakeholders (Flight leaders, OU Safety, Airport Management, Tower, OKC TRACON and Tinker AFB). Our SMS process has been benchmarked by AABI.
Kansas State University Salina	
LeTourneau University	
Middle Tennessee State Univ.	Yes; both aggregate data and individual safety report data are brought back to students and instructors at beginning of semester and mid-semester meetings, as well as through e-mail communications throughout the semester
Purdue University	
Southeastern Ok. State Univ.	Somewhat. Evolving.
The Ohio State University	Yes
University of North Dakota	Yes. Many ways through monthly meeting presentations, safety seminars and other promotional elements
University of Oklahoma	Yes. All students have a mandatory safety class. We also hold monthly safety meetings with all stakeholders (Flight leaders, OU Safety, Airport Management, Tower, OKC TRACON and Tinker AFB). Our SMS process has been benchmarked by AABI.
University of Omaha	Not directly. We use commercial flight training providers who also have a formal SMS system. Our system is mainly to augment their systems.

How are you developing professionalism in students?

Auburn University	
Aviator Col of Aero Sci & Tech	We sponsor, maintain and encourage membership to our a Student Leadership Corps
Embry-Riddle Aeronautical Univ.	We focus on our flight instructor core's professionalism by providing training, setting formal expectations and holding individuals accountable. This is the key as professionalism and safety are in the affective domain and they are learned through role models and mentorship. We have professional standards for students as well including a "professional conduct board" that adjudicates any student professionalism issues. Students are held accountable for unprofessionalism.
Florida Institute of Technology	The structure of our program is continually developing professionalism within our students. Students are given more responsibility within their training to ensure course requrements are being met, along with dress code and enhancing the PIC/ Professional mentality.
Fox Valley Technical College	Modeling industry operations. Meeting and exceeding standard industry protocol, procedures, and professionalism throughout the operation and training process.
Inter America U of Puerto Rico	We have a course
Kansas State University Salina	
LeTourneau University	Special topics Aviation Leadership course.

Qualitative Information

Louisiana Tech University	PRAV 495 Aviation Professionalism and Internship requirements.
Middle Tennessee State Univ.	Our students begin discussing professionalism formally in their first semester freshman year AERO 1010 Introduction to Aerospace course. This development continues over the course of the ground school coursework (Pro I-V courses) as well as in Aviation Safety and CRM courses, finally culminating with a senior capstone Aviation Professional Pathways course.
Purdue University	core value
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	It is discussed in the classroom of most courses. Also, discussed and during flight training.
St. Louis University	
The Ohio State University	Safety stand down meetings, regular communication of lessons learned from SMS, a formal corrective action plan administered by the University for students who do not make progress.
University of North Dakota	Many ways.
University of Oklahoma	CFI is an elective in which students much display a level of professionalism to be allowed to take the class. All studnets are informed on thier first day that thier job interview to be an OU CFI and airline pilot starts with thier first class. Our intro to aviation class exposes our students to the expectation expected of them.
University of Omaha	Mentors, Guest speakers from airlines, corporate flight departments, and fractional flying partners. We also just emphasize a professional attitude in everything we do.

How to you facilitate mentoring of students? (Who acts as mentors, and what training, if any, do they undergo?)

Auburn University	
Aviator Col of Aero Sci & Tech	Senior Flight and Ground Instructors provide majority of mentoring in one on one coaching sessions
Embry-Riddle Aeronautical Univ.	Research we conducted shows that the Initial Flight Instructor of a student has the biggest impact on their safety behavior and professionalism. IPs receive training in this area during new hire and it continues to be overseen by the Quality Assurance team.
Florida Institute of Technology	Each individual instructor acts as their own student's mentor.
Fox Valley Technical College	Wrap around support of students through peer, instructor, advisor, counselor, and industry rep support.
Inter America U of Puerto Rico	Through industry connections, faculty, and senior students
Kansas State University Salina	
LeTourneau University	Flight instructors and Asst Chief instructors mentor students.
Louisiana Tech University	Industry Advisory Board and professors.

Qualitative Information

Middle Tennessee State Univ.	Students have both assigned academic advisors and faculty mentors. No specific training.
Purdue University	Faculty, instructors
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	Aviation Alumni serve as Mentors
St. Louis University	
The Ohio State University	We have a dedicated staff member who monitors student progress and helps with issues that arise.
University of North Dakota	Naturally CFI/ student relationship. Have mentor program through student group snd alumni board too
University of Oklahoma	Each student is assigned an assistant chief flight instructor as a mentor. We also have our senior students mentor our younger students. lastly, we have industry mentors for all our students.
University of Omaha	We use mentors from airlines and local aviation companies as "unofficial" mentors. The airlines offer mentorship training to their pilots, but we do not have a formal training process.

What opportunities does your program provide for acquisition of tacit knowledge (knowledge arising from experience, practice, personal values, etc.)?

Auburn University	
Aviator Col of Aero Sci & Tech	Opportunity to become a full time flight instructor, participate in Leadership Corps
Embry-Riddle Aeronautical Univ.	This is key in development of airmanship. We focus on building professional values through mentorship during their time in training. We also require students to complete training scenarios in the flight training devices to build their decision making and experience. Talking about and studying emergency procedures will only get them so far on tacit knowledge; we us simulation so that they have to experience emergencies and apply their knowledge in the safe environment of the FTD and FFS.
Florida Institute of Technology	Oppotrunities range from students soloing to our Safety Improvement Program. This program allows any student or employee to make suggestions for policy and procedural improvements.
Fox Valley Technical College	Experiential learning infused throughout training process.
Inter America U of Puerto Rico	Our program has a practicum course.
Kansas State University Salina	
LeTourneau University	Self assessment form at the end of each flight used to conduct debriefing with instructor.
Louisiana Tech University	Internship.
Middle Tennessee State Univ.	We have a number of alumni who come back to talk with and work with our students in a variety of capacities from speaking to classes; providing safety symposiums, doing mock interviews, and instructing in our CRJ sims.

Qualitative Information

Purdue University	flight instruction, internships
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	the student work force at the airport
St. Louis University	
The Ohio State University	Our flight education space directly connects to the main airport terminal and there is a lounge specifically built for the purpose of letting students connect with professional pilots. This allows them to ask questions and learn from those that are working in industry.
University of North Dakota	Numerous industry presentations through the years
University of Oklahoma	Our CRM class and safety meetings are used for this purpose.
University of Omaha	

How do you measure the effectiveness of your training program?

Auburn University	
Aviator Col of Aero Sci & Tech	Tracking pass rates, repeats and failures as well as job placements
Embry-Riddle Aeronautical Univ.	Feedback from industry on graduate performance (when available). Student success rates (tests, practicals, and job placements). Data from Quality Assurance program on instructor performance. Data from quality management program on course/line item success rates.
Florida Institute of Technology	
Fox Valley Technical College	Stage check success %, practical test success %, graduation %, retention %, course completion %
Inter America U of Puerto Rico	Through assessment
Kansas State University Salina	
LeTourneau University	Percentage of students who pass checkrides on first attempt.
Louisiana Tech University	Pilot Certificate and Rating rates vice entries, satisfaction surveys during internships, mock interview feedback, interview feedback, and FAA DPE pass rates.
Middle Tennessee State Univ.	As part of our AABI accreditation, we access a myriad of goals and objectives each year with the goal of continuous improvement over previous performance.
Purdue University	success in industry
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	Pass rate, grad rate, retention, placement rate

Qualitative Information

St. Louis University	
The Ohio State University	Certificate completion rates, number of hours per certificate, cost of each certificate level
University of North Dakota	Exam scores, stage check pass rates l, industry feedback
University of Oklahoma	We use AABI criteria to include graduation rates, on-time completion of classes, 1st time pass rates, student feedback, faculty feedback and industry feedback.
University of Omaha	By maintaining our part 141 program, through exit surveys when students graduate, and through follow-on meetings with graduates who are working in commercial aviation.

What has driven any notable changes to your training program in the past 5 years?

Auburn University	
Aviator Col of Aero Sci & Tech	COVID
Embry-Riddle Aeronautical Univ.	Increased VR technology has reduced training time (calendar days and flight time).
Florida Institute of Technology	The airline industry itself, being very marketable at present, has drived most changes.
Fox Valley Technical College	
Inter America U of Puerto Rico	Shortage of pilots
Kansas State University Salina	
LeTourneau University	
Louisiana Tech University	Industry demand for pilots.
Middle Tennessee State Univ.	Our enrollment has doubled over the past 5 years, from around 650 students in the department to around 1300 in the department. Flight student enrollment has gone from 450 students to 900 students in the same time frame. New aircraft purchases along with factory refurbishment of our existing fleet in order to meet this demand was required. Additional faculty and staff have also been added, although finding quality candidates for these positions is a challenge.
Purdue University	equipment, acquisition of large aircraft FSTD's
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	Huge evolution of training focus and professional training. Added technology and sophistication. Added Accreditation and SMS focus.
St. Louis University	
The Ohio State University	Accreditation through AABI has brought the most notable change, as it has made us take a close look at many of our operations.

Qualitative Information

University of North Dakota	FAA requirements, industry feedback
University of Oklahoma	Demand for our program has increased dramatically
University of Omaha	The pilot shortage has greatly increased the number of students we are seeing in our program. The recent acquisition of our 737 flight training device has also fueled our growth.

How do you assess/select flight instructors?

Auburn University	
Aviator Col of Aero Sci & Tech	Tracking individual pass rates, repeats and failures
Embry-Riddle Aeronautical Univ.	We have a 4 part interview that consists of a knowledge exam, an interview with two managers (includes a teaching demo), an instrument training interview activity in an FTD and a VFR training interview flight (C172). If they are accepted they must complete our standardization program (40 hour ground, 15 hour flight/FTD). They are then observed by flight standards and the quality assurance department during their time with us.
Florida Institute of Technology	Flight instructors are periodically "checked" randomly, as well as regulatory for 141 purposes. Weekly obeservations of instructors are also conducted.
Fox Valley Technical College	HR process, metrics related to CFI performance in KPIs noted above
Inter America U of Puerto Rico	Interviews and stage checks
Kansas State University Salina	
LeTourneau University	Personal interview and flight evaluation.
Louisiana Tech University	Internal students that apply to be CFIs and have excelled in their training.
Middle Tennessee State Univ.	Only about the top half of the applicants who apply for a CFI lab are selected; of those that complete the CFI, a stringent airline style interview process is conducted. A written test, a presentation, and a panel interview is part of the process. A week long indoc training program is conducted for new hires.
Purdue University	Interview process
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	we rate instructors based upon maturity, professionalism, and motivational drive.
St. Louis University	
The Ohio State University	Most CFIs are produced internally, and the Chief Instructor conducts their examination flights. Once those are completed, a formal interview process is completed.
University of North Dakota	Application, written test, interview, panel and sim check
University of Oklahoma	As mentioned above, CFI is offered as an elective and only those who displayed the professionalism and potential to be a CFI are allowed to take the class. Even if they complete the class, they go through a formal interview process (based on the airline interview process) before they are hired.

Qualitative Information

University of Omaha	N/A. We don't own our own aircraft. Flight instructors work directly with our local flight training partners and we do have any say in their hiring.

Does your program address the period between pilots' completion of their Commercial Certificate and Multi-engine and Instrument Ratings, and their meeting the requirements for obtaining an ATP Certificate? If yes, please elaborate. (E.g., do you provide placement or employment opportunities for students during this period?)

Auburn University	
Aviator Col of Aero Sci & Tech	We provide many part time employment opportunities i.e. manning the front desk, manning dispatch, conducting school tours etc...
Embry-Riddle Aeronautical Univ.	Yes, our career services does a good job. Most will get employment as a CFI. Job placement rate for Aeronautical Science students is reported to be 97.6%
Florida Institute of Technology	We encourage students to do their CFI to gain more experience and ratings while buidling their hours.
Fox Valley Technical College	Opportunity to be selected to instruct here
Inter America U of Puerto Rico	We provide employment opportunity for our own pilot students. In addition, our institution has R-ATP authority.
Kansas State University Salina	
LeTourneau University	Hiring students as flight instructors or providing career services.
Louisiana Tech University	Not at this time.
Middle Tennessee State Univ.	While we hire a percentage of students as flight instructors, there is really nothing in place for those who are not hired internally.
Purdue University	
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	no
St. Louis University	
The Ohio State University	Most of our graduates stay within the program to teach as a CFI. They gain their hours doing that.
University of North Dakota	Require CFI and CFII in degree program, hire many internally
University of Oklahoma	Our program ensures a quick transition through multi. Most of our students do not take thier CFI course untile they have obtained all of the above listed certificates.
University of Omaha	no

Do you maintain contact with program graduates for awareness of their continuing flight career/training? If yes, please describe the level of contact, If possible, state what percentage of graduates complete air carrier initial new hire training without any training module repeats.

Auburn University	
Aviator Col of Aero Sci & Tech	As much as possible but not as good as we would like

Qualitative Information

Embry-Riddle Aeronautical Univ.	Our alumni relations keeps contact but we do not have direct training data. The pilot source study showed that our graduates who were hired at a regional after 1 year of flight instructors were the top performing group in airline new hire training.
Florida Institute of Technology	90% of our graduates go to Air Carriers at the completion of either their training or after working with us as CFIs.
Fox Valley Technical College	Yes - we serve as a lifelong resource of support
Inter America U of Puerto Rico	Yes, we ask them for updated resumes every now and then.
Kansas State University Salina	
LeTourneau University	
Louisiana Tech University	Yes, through the IAB.
Middle Tennessee State Univ.	While we try to stay in touch with all of our alumni, the level of responsiveness of individuals varies greatly. While anecdotal and survey evidence indicates a high level of success, it is possible that only successful individuals are choosing to respond.
Purdue University	yes, industrial advisory board. 100% complete training
Sch. of Missionary Av. Tech	
Southeastern Ok. State Univ.	Yes, through aviation alumni association.
St. Louis University	
The Ohio State University	Yes, this is a requirement of our accreditation, and we partner with our Aviation Alumni Society.
University of North Dakota	
University of Oklahoma	Yes. We have a formal 18 month and five year follow up process to see how they are doing
University of Omaha	Yes, as much as possible. We attempt to send out periodic electronic newsletters with what we are doing at the university. We also reach out to them and ask if they would return and speak to our students periodically.