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Implementing an Enrollment Cap in a Southeastern Collegiate Flight Program

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A southeastern land-grant university decided to impose an enrollment cap on its Part 141 collegiate flight program due to increased enrollment pressures and limited availability of training resources. This article presents a case study of the planning and implementation of an integrated two-stage admission program that focused on selecting students based on academic rigor, preparedness, and aviation readiness. A diverse selection committee of both military and civilian flight training experts reviewed 493 applicants using a rubric-based examination of aviation experience and essay responses, while excluding standardized test scores and high school grade point averages (GPAs). In the process, student motivation, ability to perform well on the FAA written exam, and any prior aviation experience were highlighted while avoiding placing a competitive disadvantage on non-pilot applicants. The quality of the essays and the degree to which the candidate demonstrated dedication to aviation made more difference in a person's selection than licensure alone. The study concludes with recommendations for incorporating personality and grit assessments in future iterations to enhance predictive validity and reduce reviewer workload.

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Introduction

Managing rapid enrollment growth is a significant challenge for many collegiate aviation flight programs. The rising popularity of collegiate flight training can be attributed to several factors. In recent years, careers as pilots have become as lucrative as those in law, medicine, or business, with commercial pilot salaries for regional carriers doubling from 2015 to 2017 (Tulis, 2017). Additionally, graduates from most collegiate aviation programs are eligible for up to a 500-hour reduction in flight time required to obtain an Airline Transport Pilot certificate. A recent study of 33 collegiate aviation flight programs found that the schools surveyed were operating at 97% of their maximum capacity, with 14 out of 33 schools exceeding 100% capacity in enrollment (Thomas & O'Toole, 2020). Furthermore, 82% of schools reported a lack of Certified Flight Instructors (CFIs), and 42% cited aircraft availability as a limitation to flight training (Thomas & O'Toole, 2020). Collectively, many collegiate aviation flight programs are struggling to keep up with the increased demand for pilots.

Due to growing demand and limited resources, enrollment caps have become a necessary tool to implement in many collegiate flight programs. At public land-grant institutions, implementing such caps requires careful consideration of their mission to provide accessible education to the working class. Land-Grant institutions were established by the Morrill Acts of 1862 and 1890. These institutions were designed to support national development in essential fields like agriculture and engineering (National Association of State Universities and Land-Grant Colleges, 2008). In light of the pilot shortage, flight training at a land-grant university aligns well with this mission. This case illustrates how enrollment policies in high-demand majors must balance resource constraints with institutional values and national workforce needs.

Selection Committee Formation and Purpose

The School of Aviation formed a committee consisting of faculty and flight instructors, with backgrounds in military, corporate, airline, and general aviation. The committee's primary objective was to develop a comprehensive applicant screening process tailored to the collegiate Part 141 flight program.

In establishing the screening process, the committee's main goal was to uphold high academic standards while also supporting the land-grant institution's core mission. This mission emphasizes making educational opportunities accessible to people without an aviation background rather than favoring those with airline-pilot family backgrounds. The selection of committee members was intentional to ensure representation from both military and civilian flight training backgrounds. This diversity helped foster a balanced admissions approach by ensuring a wide range of skills and perspectives in the aviation industry. Guided by a unified purpose, the committee engaged in thorough discussion and review of the current literature on student selection criteria for collegiate aviation programs.

Candidate Selection Considerations in Collegiate Aviation

Selecting collegiate aviation students is challenging because there is no agreed-upon set of metrics that identifies the perfect candidate. Unlike many professional fields, the Federal

Aviation Administration (FAA) does not require a college degree for individuals pursuing a career as a commercial or airline transport pilot, and this is also true for many airlines (FAA, 2024). This situation invites discussion on which criteria should be prioritized in the selection process. Specifically, there is ongoing debate regarding whether academic achievements or proven flying aptitude should be emphasized, and whether personal qualities such as determination and resilience, often referred to as "grit," should play a significant role in selection.

Selection Methods in Practice

Upon reviewing the student selection processes at various colleges, it is evident that approaches vary. Some institutions use a first-come, first-served method to admit flight students, granting entry solely on the timing of a student's application after university admission. In contrast, other programs employ a more comprehensive secondary application process. This additional screening often involves evaluating specific academic characteristics, such as high school grade point average (GPA) and standardized test scores, to estimate a student's likelihood of successfully completing the aviation program (Broach et al., 2019; Osman et al., 2022).

However, it is important to note that standardized tests, such as the ACT and SAT, have limited predictive validity for academic performance beyond the freshman year of college (Pennsylvania State University, 2010; Sanchez, 2024; Snyder & Dillion, 2011). Accordingly, these scores offer only a narrow view of a student's academic preparedness for flight training. Recognizing these limitations, the committee favored a holistic approach to evaluating applicants, rather than relying heavily on high school GPA and standardized test scores.

Aptitude and Personality Predictors

In addition to traditional academic metrics, some organizations, both within and outside collegiate settings, use psychomotor and cognitive aptitude tests to assess candidates. These assessments measure hand-eye coordination and intellectual abilities. Two popular examples include the PILAPT (Pilot Aptitude Test) and the Cut-e Pilot Assessment. While these tests are relatively affordable (costing less than $100 per individual), their effectiveness as screening tools varies. Research has shown that psychomotor tests can predict initial success in pilot training, whereas cognitive and psychometric exams are better indicators of performance in ground school and simulator environments (Carretta & Ree, 2003; McFarland, 2017; Vidulich & Tsang, 2001). Nevertheless, additional peer-reviewed studies are needed to fully understand their predictive value throughout all stages of flight training.

Other factors that correlate with success in collegiate aviation programs include high school GPA and grades in college-level aeronautics courses (McFarland, 2017). Studies suggest that these academic indicators are linked to successful progression from private to commercial pilot training and to reduced training time. Furthermore, research on personality traits has identified that students who score high in conscientiousness and agreeableness—traits from the Big Five personality model—tend to complete aviation programs more efficiently, requiring fewer training hours (Billingslea, 2025).

Implementation Strategy

After careful deliberation, the committee adopted a straightforward approach to determine a student's likelihood of success in the four-year collegiate professional flight training program. Recognizing that some applicants will have a private pilot's license, which could confer a significant advantage. In contrast, others may not have had the financial means or opportunity to obtain one, the committee established a predetermined percentage of seats specifically for non-pilot applicants. This measure was intended to ensure qualified candidates without prior flight experience would not be overlooked in favor of those with existing licensure.

Two primary objectives guided the committee: (1) avoiding an overly complex application process that could discourage prospective students and (2) preventing additional financial burdens, such as requiring third-party testing. At the same time, the process needed to identify applicants who demonstrated both academic potential and a strong motivation to complete flight training. To achieve these goals, a two-step application process was employed. The first step was for students to gain early admission to the university, thereby confirming their academic preparedness. The second step involved submitting a secondary application. This step initially screened students to prove possession of an FAA first-class medical certificate, a local requirement for the flight school. The application then evaluated candidates' potential for success in flight training based on their aviation background.

Data such as names and demographic information were removed by college-level admissions staff before reviewers saw their assigned essay question. Applicants were given an identification number, and only the requested information was reviewed. Because cognitive ability was assessed at the university level through the Early Action program, reviewers were not provided with applicant test scores or GPA information. Applicants were awarded points for various achievements and experiences, such as completing and passing the FAA private pilot written exam or Part 107 drone certification exam, participating in a discovery flight, completing a solo flight, holding a private pilot's license, and responding to four essay questions. These essays were designed to assess each candidate's motivation, preparation for flight training, and leadership qualities. For the essay component, each response was evaluated by at least two raters. To support interrater reliability and consistent scoring, the reviewers received training on the grading rubric using sample essays of varying quality. Additionally, general criteria were agreed upon by the reviewers (e.g., content versus writing quality). Each applicant received a numerical score and was ranked accordingly from highest to lowest.

Selection Results

The selection committee reviewed 493 applicants, of whom 20% were female and 15% were minorities. After a thorough review that lasted approximately six weeks, during which each committee member read 493 essays, 182 offers were made (17% female and 14% minority).

Notably, the demographics of the students receiving offers were similar to those of students enrolled in the program over the previous five years. In the application pool, 60 students already possessed their private pilot license (16 from Part 141 flight schools and 44 from Part 61 flight schools). Of that group, 49 were offered admission, with all applicants from

Part 141 flight schools receiving a slot, and only 33 of the 44 from Part 61 schools receiving one. However, a review of the essays and FAA written test scores showed that those 11 were not as competitive as other students.

In reviewing the characteristics of the bottom 20% of those offered an admission slot (36 students), all were non-pilots, and none took the FAA written exam. Many of them have soloed, and nearly all have had a discovery flight. What ~~really~~ set them apart from the non-selects was the quality of their essays, which painted a clear picture of their desire and readiness for a rigorous Part 141 flight school.

In reviewing the characteristics of the top 20% of the non-selects (36 students), all of them took the FAA written. Although they passed, they generally scored low. Nine of them held a private pilot license, and 24 of them soloed. However, in general, their applications were not as strong as others' because of a combination of low essay scores.

Discussion

Overall, the selection committee felt that those offered admission demonstrated a propensity for success in a rigorous Part 141 collegiate flight school. Although not used as a screening tool in the secondary application (e.g., standardized test scores such as the ACT/SAT), the average ACT score was 29. Having a private pilot license did not guarantee acceptance; rather, it was performing well on FAA written exams (either the private pilot written or the part 107 drone license exam) and having substantive, well-written essays. Likewise, a lack of attention to the application (sloppiness and incomplete sections), as well as low FAA test scores, hurt students' chances of acceptance.

Conclusion

The selection process took six weeks, during which each committee member read nearly 500 essays. This did put a strain on the team and created a desire for an alternative evaluation tool, besides essays, to reduce the team's burden. Going forward, the current students who selected their slot performance will be tracked, along with additional research, to obtain their Big Five Personality traits and Grit score. Grit is the passion and perseverance for long-term goals, and research supports the idea that a person's "grit" can be measured (Duckworth, 2016). Along with current data from their application, we will identify the factors that lead to students' success over the four years of the program. This data will be used to update our application process.

References

Billingslea, W. (2025). *Predicting collegiate aviation students' performance in flight training through understanding their personality traits* [Doctoral dissertation, Auburn University]. Auburn University Electronic Theses and Dissertations. https://etd.auburn.edu/handle/10415/9652

Broach, D., Schroeder, D. J., & Gildea, K. (2019). *Best practices in pilot selection* (DOT/FAA/AM-19/6). Federal Aviation Administration, Office of Aerospace Medicine. https://www.faa.gov/sites/faa.gov/files/data_research/research/med_humanfacs/oamtechreports/201906.pdf

Carretta, T. R., & Ree, M. J. (2003). Pilot selection methods. In J. A. Wise, V. D. Hopkin, & D. J. Garland (Eds.), *Handbook of aviation human factors* (pp. 417–438). CRC Press.

Chaparro Osman, M., Sharma, V., Ficke, C., Menta, R., Wheeler, B., & Carroll, M. (2022). Predicting pilot-in-training success and persistence in a private southeastern United States university. *Collegiate Aviation Review International, 40*(2), 146–164. https://doi.org/10.22488/okstate.22.100261

Duckworth, A. (2016). *Grit: The power of passion and perseverance*. Scribner/Simon & Schuster. https://psycnet.apa.org/record/2016-30309-000

Federal Aviation Administration (2024, July 9). *Become a pilot.* https://www.faa.gov/pilots/become

McFarland, M. R. (2017). *Student pilot aptitude as an indicator of success in a Part 141 collegiate flight training program* (Publication No. 10597713) [Doctoral dissertation, Kent State University]. ProQuest Dissertations and Theses Global.

National Association of State Universities and Land-Grant Colleges (2008). *The land-grant tradition* (ERIC No. ED517309). https://eric.ed.gov/?id=ED517309

Pennsylvania State University. (2010, August 23). *Standardized tests not always best indicator of success*. https://www.psu.edu/news/students/story/standardized-tests-not-always-best-indicator-success

Sanchez, E. I. (2024). *Predictive validity of high school GPA and ACT composite score on graduating college GPA: Examining first-year college GPA as a mediator* (ACT Research Report R2417). ACT Education Corp. https://files.eric.ed.gov/fulltext/ED673778.pdf

Snyder, T. D., & Dillow, S. A. (2011). *Digest of education statistics, 2010* (NCES 2011-015). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. https://nces.ed.gov/pubs2011/2011015.pdf

Thomas, R. L., & O'Toole, N. M. (2020). Training capacity of the fixed wing FAA Part 141 flight schools within the United States. *Collegiate Aviation Review International, 38*(1). https://doi.org/10.22488/okstate.20.100201

Tulis, D. (2017). Regional airline pilot pay doubles in two years. *Air Line Pilot Magazine, 86*(7), 24–27.

Vidulich, M. A., & Tsang, P. S. (2001). The WOMBAT situational awareness and stress test: A tool for pilot selection. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 45*(2), 110–114. https://www.researchgate.net/publication/228500880