
An Analysis of Student Programmatic Delays in Postsecondary Flight Training Programs: A National Study

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ABSTRACT

The purpose of this study was to determine the number of University Aviation Association (UAA) member postsecondary institutions that were experiencing student delays in flight certification. Such delays can lead to increased costs for the student, the failure to complete the intended academic program, and an interruption in career progression. The study also sought to determine: if the delays were increasing or decreasing; if there was a difference between less-than-four-year and four-year postsecondary flight training institutions; and whether flight simulation, student monitoring, weather, geographic location, instructor availability, instructor turnover, aircraft availability, and institutional financial and grading policies were related to flight student training progression.

The study revealed that approximately 88 percent of the respondents noted that they were experiencing a problem with flight student progress delays at their institution. The research indicated that institutional financial policies and the use of ground-based training devices were associated with a reduction in flight training progress delays.

INTRODUCTION

Since the passage of the Airline Deregulation Act (ADA) in 1978, the need for professionally-trained air carrier pilots in the United States has expanded substantially. For example, the number of hours flown by scheduled U.S. air carriers has risen from 6,697,770 in 1982 to 11,866,213 in 1992, an increase of more than 77 percent (National Transportation Safety Board, 1994).

Postsecondary academic institutions have replaced the military as a major source of cockpit staff. While the colleges and universities offering postsecondary flight training programs do not have the aviation resources of the U.S. Air Force or Navy, the airlines have found that postsecondary institutions produce high-quality, professional aviators. Further, most postsecondary programs require that the pilots learn critical thinking skills through a substantial component of general education and cognate courses (Federal Aviation Administration, 1993).

BACKGROUND

As early as 1976, the UAA's standards recognized the detrimental effects of a student's flight course progress lagging behind the related ground course in a given semester. The UAA suggested that "concurrent enrollment in flight lecture courses and associated flight lab courses or another suitable system of flight lecture/lab course integration will facilitate maximum learning" (Kiteley, 1976, p. 17).

Students who fail to complete the flight courses in a timely manner lose the potential for maximum learning achieved in concurrent lab/lecture courses. the UAA (Kiteley, 1976, p. 17). Further, they often fail to meet the prerequisites of the upcoming courses in their curriculum. As a result of this failure to meet the prerequisites, many change their major or drop out of the program altogether. With the growing importance of postsecondary flight providers as a source of air carrier pilots, this problem could negatively impact the future availability of professional flight crews.

In a report prepared for the Federal Aviation Administration in 1973, Hollister, LaPointe, Oman, and Tole conducted a study that measured "skill degradation of non-instrument rated, single-engine, FAA certificated private and commercial pilots" (1973, p. 1). The results of the study identified that the most important factor in determining the variations in pilot skill of the sampled group was recency-of-flight experience. According to the study, recency-of-flight experience:

Accounted for the largest percentage of the variance (40% of the contribution of all experience factors combined). [Yet] it is the experience factor which can be varied most easily...Recency will decay exponentially to zero with a time constant of four weeks with no flying...These results are valuable for helping pilots to appreciate the importance of total time and recent experience. (Hollister et al, 1973, pp. ix-x)

The research by Hollister et al serves to highlight the importance of recency-of-experience, especially for low-time pilots such as those in postsecondary flight programs. A lack of flying for a period of several weeks for a flight student can lead to a vicious cycle: a lack of flying (due to a lack of money, bad weather, or other factors) develops the need for even more flying and the expenditure of more money. The end result could be an incomplete grade and programmatic delay for the student.

SURVEY METHODOLOGY

Description of the Population

A survey questionnaire was sent to flight program administrators at all University Aviation Association (UAA) member postsecondary institutions. The UAA was founded in 1950, and is "composed largely of persons either representing or working with institutions of higher education which have aviation

programs" (Kiteley, 1976, p. iv). According to the UAA, there currently are 109 member institutions—two are located outside the United States. The survey questionnaire methodology was used because of its versatility in exploring a wide range of phenomena.

Development of the Research Instrument

The research instrument was developed in response to problems of postsecondary programmatic delays experienced by flight students at the researcher's institution, and understood to exist at other UAA member institutions. Additional questions were developed as the result of closed- and opened-ended questionnaires completed by students at the researcher's institution (Bryan, 1995). Additional resources utilized in the development of the research instrument were curricular data developed by the UAA (Kiteley, 1976). The questionnaire is included as Appendix A. Responses to each of the items on the questionnaire are included in tables 4.1 through 4.20 in Appendix B.

Research Questions

The study began with six basic research questions from which the questionnaire was developed, as follows:

1. How many UAA institutions nationwide are currently experiencing problems with flight student programmatic delays, whereby students fail to complete their flight courses in the semester prescribed by the curriculum?
2. Is the problem of flight student programmatic delays increasing or decreasing?
3. Is there a difference between less-than-four-year and four-year postsecondary flight training institutions in the area of flight student training progression?
4. Is the use of flight simulation related to postsecondary flight student training progression?
5. Is institutional monitoring of student flight progress during the semester related to flight student training progression?
6. Are weather, geographic location, instructor availability, instructor turnover, aircraft availability, and institutional financial and grading policies related to flight student training progression?

Analysis of Findings

Of the 106 flight program administrators at UAA institutions included in the survey, 80, or approximately 75 percent, responded prior to the November 3,

1995, cutoff date. The response rate in was in the mid--range of the researcher's expectations.

Research Question 1 pertained to the number of University Aviation Association (UAA) institutions nationwide that were currently experiencing problems with flight student programmatic delays. Responses to this question were garnered from Item 6 from the questionnaire. The responses to Item 6 reported whether the institution was experiencing no problem, a minor problem, or a major problem. (The determination of whether a whether a problem was major or minor was left to the respondent.)

The data revealed that nearly 88 percent of the postsecondary institutions were experiencing a problem with the failure of flight students to complete their flight courses in the semester prescribed by the curriculum (see table 4.6). Responses to Item 6 from the questionnaire reported that 37 institutions, or 58 percent of the respondents, were experiencing minor delays, and 19 institutions, or nearly 30 percent, were experiencing major delays. Only 7 institutions, or 11 percent, reported that they were not experiencing a problem with flight student programmatic delays.

In addition to the direct response from the participants to Research Question 1 in Item 6 of the questionnaire, further data were gathered in Item 11 of the questionnaire. In that question, participants were asked "How many of your flight students fail to complete their flight course in the semester predicated by the syllabus?"

Of the respondents, over 20 percent noted that 1--10 percent of their students failed to complete their flight course in the prescribed semester; over 34 percent reported 11--25 percent; nearly 22 percent noted 26--50 percent, and nearly 19 percent responded that more than 50 percent of their students failed to complete their flight courses on time. One respondent reported that all of their institution's students completed their flight courses in the semester predicated by the syllabus (see table 4.11).

Research Question 2 pertained to whether the problem of flight student programmatic delays was increasing or decreasing at institutions where the respondents reported that a problem existed. The data revealed that 42 respondents (nearly 66 percent) reported no trend (see table 4.7). Ten respondents (nearly 16 percent) reported that the problem of flight student programmatic delays was decreasing, while 7 (nearly 11 percent) reported the problem was increasing.

Research Question 3 sought to identify whether there was a difference between less--than--four--year and four--year postsecondary flight training institutions in the area of flight student training progression. Forty, or over 62 percent of the reporting postsecondary institutions were four--year schools, and twenty--one, or approximately 33 percent were two--year schools (see table 4.5). Three respondents, or approximately 5 percent, noted Other (two granting a master's degree and the other no degree).

While both the two--year and four--year institutions reported combined minor and major problems with flight student progression of approximately 88 percent, the two--year institutions had a greater rate of reported major problems. Two--year schools reported major problems in 38 percent of the responses, while four--year schools reported major problems in approximately 28 percent of the responses.

Research Question 4 sought information on whether the use of flight simulation was related to postsecondary flight student training progression. Items 14 and 15 from the questionnaire were used to elicit information on this subject. The data indicated that over 78 percent of the institutions require the use of simulators or pilot ground training devices as a part of their private or commercial pilot flight courses (see table 4.14). While approximately 22 percent reported no such requirement for their flight students, those schools produced nearly half of the major problem responses in Item 6 of the questionnaire.

The responses to Item 15 indicated that approximately 81 percent of the schools did not require the use of simulators for students with extended non--flying periods (see table 4.15). However, the schools that did require the use of simulators for students who did not fly for three or more weeks reported a lower rate of major problems with student progress. Ten respondents reported that they required the use of ground trainers during such non--flying periods, with only one reporting major progress problems. Fifty--two reported they did not use such devices, and reported 18 major progress problems.

The data indicated a relationship between the incidence of major flight student progress delays at postsecondary institutions and the use of ground training devices. While the use of ground trainers does not appear to lessen the incidence of minor problems, it appears to be related to a reduction in the rate of major progress delays.

Research Question 5 asked whether the monitoring of student flight progress during the semester was related to flight student training progression. The responses to this question were garnered from Item 20 of the questionnaire. The responses indicated that approximately 90 percent of the institutions monitored the progress of their flight students during the semester (see table 4.20). By reviewing the data, no clear relationship can be drawn between institutional monitoring of flight student progress during the semester and flight student delays.

Research Question 6 asked if weather, geographic location, instructor availability, instructor turnover, aircraft availability, and institutional financial and grading policies were related to flight student training progression.

Item 12 from the questionnaire elicited responses regarding weather, instructor availability, and aircraft availability as factors in flight training delays (see table 4.12). Twenty--one of the 64 institutions, or approximately 33 percent, reported that weather was the major factor in flight training delays. Twenty--eight institutions, or nearly 44 percent, noted that student finances were the most important causal factor for flight training delays. Item 12 also asked the respon-

dents to rank instructor and aircraft availability as causal factors in flight student progress delays. None of the respondents reported these two areas as primary causal factors.

A crosstabulation of institutional geographic location in Item 3 of the questionnaire and Item 6, indicating problems with flight student progress delays, was developed. The data indicated no clear relationship between geographic location of the school and flight student progress delays. A larger percentage of the institutions in the north central United States (20%) reported no problems with flight student progress delays than those located in the southeastern United States (approximately 15 percent).

Item 17 from the questionnaire asked whether flight instructor turnover was a factor in flight student progress delays. The results indicated that flight instructor turnover was not a major problem at most institutions. Forty--five, or approximately 70 percent, reported no problems in that area (see table 4.17).

Items 9 and 10 of the questionnaire were related to institutional financial policies and their impact of flight student progress delays. The responses from Items 9 and 10 were crosstabulated with the responses from Item 6 of the questionnaire, which asked whether the institution was experiencing a problem with flight student progress delays. The data in the crosstabulations revealed a relationship between institutional financial policies and the number of major progress delays.

The data indicated major flight student delays at 14 of the 29 institutions that did not have a formal process for determining student financial fitness. Only one of nine that did determine student financial fitness reported experiencing major progress delays.

Item 19 from the questionnaire asked whether the respondent's institution used the same policy regarding flight course incomplete grades as in other academic courses. Approximately 48 percent of the respondents reported a more flexible policy rendered toward flight students, while nearly 52 percent reported using the same policy as in other academic courses. None of the respondents reported that a less flexible policy was used for flight students.

A crosstabulation was developed using Item 19 and Item 6, the level of reported flight student progress delays. There was little difference between the institutions with the same policy as in other academic courses and those with a more flexible grading policy.

Of the 33 institutions reporting the same policy toward incomplete flight grades, 20 reported minor problems and 9 reported major problems. Of the 30 institutions reporting a more flexible policy, 17 indicated minor problems and 10 reported major problems.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine the number of UAA member postsecondary institutions that were experiencing student delays in flight certification. Such delays can lead to increased costs for the student, the failure to complete the intended academic program, and an interruption in career progression.

This study queried the aviation program administrators of UAA member flight institutions to determine the extent of the problem. Through a questionnaire, the researcher determined whether a relationship existed between student flight curriculum progress and certain identified factors at those institutions.

A descriptive research methodology was utilized to obtain and report the data for this study. A survey questionnaire was sent to all members of the University Aviation Association (UAA) who were located in the United States, with the exception of the researcher's home institution. The University Aviation Association was founded in 1950 and is a national organization representing the interests of institutions with postsecondary aviation programs.

The results of the study were based upon the data collected from the questionnaires completed by the respondents. The study provided useful information about the propensity for flight student programmatic delays at the institutions, and respondent perceptions of the chief causal factors for such delays. Data on institutional policies and how they relate to flight student delays were also gathered.

With the growing importance of postsecondary institutions in the training of commercial pilots, it is important that the body of research in this area of education be expanded. No prior studies have been conducted in the area of postsecondary flight student progress delays. This study was conducted in an effort to identify the causal factors in such delays, so as to provide a basis for remedial methodologies.

Conclusions

As a result of the data obtained by this study, the following conclusions and interpretations were drawn:

1. Approximately 88 percent of UAA postsecondary institutions that offer flight programs indicated that they were experiencing major or minor problems with flight student progress delays.
2. No trend was reported in the rate of flight student progress delays.
3. No relationship was noted between the incidence of flight student progress delays and the level of degree offered at the postsecondary institu-

tions. A larger percentage of the flight student progress delays were classified as major at the two--year institutions.

4. The use of simulators or ground training devices was related to a reduction in major flight student progress delays.
5. No clear relationship could be established between institutional monitoring of flight student progress during the semester and a reduction in flight student progress delays.
6. No relationship was established between weather or geographic location as a causal factor. Instructor turnover, instructor availability, and aircraft availability also were not factors in flight student progress delays. Institutional financial policies were related to student delays. No relationship was found between grading policies and student delays.

The results of this study showed that flight student progress delays (29.7 percent major and 57.8 percent minor) were a problem at approximately 88 percent of UAA institutions. The majority of the respondents indicated that there was no trend in the level of flight student delays.

Prior to this study, the researcher anticipated that two--year postsecondary institutions, with fewer cognate and general education course demands upon their flight students than four--year schools, would experience a lower incidence of flight progress delays. There was little reported difference between the two--year and four--year institutions and the combined incidence of major and minor flight student progress delays. The percentage of major flight student progress delays was greater at the two--year postsecondary institutions.

The relationship between geographic location and the role of weather was a lesser causal factor than anticipated by the researcher. Little difference in the total responses to major and minor delays were reported by schools in weather--impacted areas and typically fair weather regions.

Prior to this study, the researcher anticipated that flight instructor turnover could be a factor in flight student progress delays. This concept was garnered from a study at the researcher's home institution (Bryan, 1995), where students reported turnover as a problem. However, the respondents from the national survey did not corroborate the researcher's earlier finding.

The financial policies of the institutions are factors in flight student progress. Institutions that either required prepayment from their flight students or engaged in a formal financial determination prior to each semester, had fewer major flight progress problems than the other institutions.

Simulators or ground training devices are important tools in reducing flight student progress delays. The institutions that used these devices experienced a lower rate of major delays and reported the only incidence of no delays.

The relatively small number of institutions that required the use of ground training devices during periods of student non--flying experienced fewer problems with major flight progress delays. The 10 institutions that required the use

of simulators reported only one major delay, for a major delay rate of 10 percent. The other 51 institutions experienced 18 major flight student progress delays, for a major delay rate of approximately 35 percent.

An unanticipated result of this study was the large number of respondents indicating that student motivational factors were a problem. In response to Item 12 from the questionnaire, more than one-fourth of the respondents indicated that either student motivation or related issues (reliability, self-discipline, workload prioritization, scheduling, and the like) were important issues in training delays.

One institution indicated that it addressed the issue of student motivation by conducting institutional flight scheduling (in other words, flights were not scheduled by the student). Further, if students failed to meet a scheduled flight period on more than three occasions, the student was dropped from the program. The respondent noted that such policies were appropriate in preparing professionals for an industry with rigorous demands.

Recommendations

Indications are that postsecondary flight training institutions will continue to play an increasingly important role in the training of professional cockpit crewmembers. With the high cost of the flight component of that training, it is important that postsecondary administrators and educators understand the underlying factors in flight student progress delays.

Prior to this study, no information was available about the incidence of flight student delays at postsecondary institutions. With the results of the study indicating that nearly 88 percent of the institutions were experiencing such delays, policies should be implemented to ameliorate the problem.

The study indicated that institutions that do not require prepayment of flight fees or engage in a formal determination of flight student finances prior to the start of a semester experience a higher percentage of major delays. It is recommended that institutions engage in a formal determination of student financial fitness or prepayment in an effort to reduce major flight progress delays.

The use of ground-based flight training devices was found to be associated with a reduction in flight student progress delays. With the increasing sophistication and modest cost of such devices, it is recommended that institutions incorporate the use of ground-based trainers in their flight courses.

Further, the research indicated that institutions requiring the use of ground-based training devices for students who did not fly for three or more weeks experienced a lesser rate of major flight progress delays.

This conclusion is supported by the earlier research of Hollister et al (1973) that noted flight skills for low-time pilots "will decay exponentially to zero with a time constant of four weeks of no flying" (p. x). Therefore, it is recommended that institutions incorporate policies that require the use of ground-based trainers for students subjected to non-flying periods of three or more weeks.

Further research is recommended in the areas of institutional financial policies toward postsecondary flight students, as well as flight student motivational attitudes, and their effect on progress delays. The use of qualitative techniques such as in--depth interviewing would likely yield greater understanding in these areas.

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APPENDIX A POSTSECONDARY PILOT TRAINING QUESTIONNAIRE

Please respond in the spaces provided. Thank you for your participation!

1. Does your institution presently offer flight training courses for credit, either through its own or contract flight facilities?
 Yes No
 (If the answer to this question is no, please stop here and return the questionnaire in the envelope provided.)
2. How many students are enrolled in aviation programs at your institution?
 Less than 50 50--199 200--500 501--1000
 More than 1,000
3. Which of the following best describes the geographic location of your institution in the United States?
 Southwest Southeast N. Central S. Central
 Northwest Northeast
- 4.

Does your institution operate its own fleet of training aircraft, or does it utilize the services of contract flight schools?

Uses own fleet Uses contract flight schools

5. What is the highest degree offered in your school's flight program?

Associate Baccalaureate
 Other (Please indicate: _____)

6. Does a problem exist at your institution with the failure of aviation students to complete their flight courses in the prescribed semester?

No Yes, minor problem Yes, major problem

7. Referring to Question 6, is the problem increasing or decreasing?

Increasing Decreasing No Trend N/A

8. Referring to Question 6, is the problem greater for students with jobs?

No Yes, somewhat greater Yes, much greater N/A

9. Does your institution require flight students to pre-pay anticipated aircraft rental costs at or before the beginning of each semester?

Yes No, prepayment not required

10. If the answer to Question 9 is "No," does your institution require any formal determination that the student has sufficient funds at his/her disposal to complete the upcoming semester's flight training?

Yes No N/A

11. How many of your flight students fail to complete their flight course in the semester predicated by the syllabus?

None 1--10% 11--25% 26--50% More than 50%

12. If the answer to Question 11 is other than "None," please rank the following as causal factors in flight training delays (Place the number 1 through 5 next to the item in the order of its importance; "1" being the item most responsible for the flight training delays).

Weather Finances Aircraft Availability
 Instructor Availability
 Other (Please describe: _____)

13. How many of your flight students fail to fly for three or more weeks during a semester in which they are enrolled in a flight course?
- None 1--10% 11--25% 26--50% More than 50%
14. Does your institution utilize simulators or pilot ground trainers as a required part of your private pilot and commercial pilot flight courses?
- Yes No
15. Does your institution require the use of simulator or pilot ground trainers for flight students who do not fly for extended periods of time?
- Yes No
16. On average, how many instructors does a typical student have during private pilot flight training?
- One Two Three Four
- Other (Please indicate: _____)
17. Do you feel that flight instructor turnover is a factor in impeding student progress in your flight program?
- Yes, minor factor Yes, major factor No
18. Are "incomplete" grades more common for in-flight courses than for other courses at your institution?
- No, less common Yes, more common No difference
19. Does your institution use the same policy regarding flight course "incomplete" grades as in other academic courses?
- Same Less flexible More flexible
20. Does your institution monitor student flight time during each semester?
- No Yes, weekly Yes, biweekly Yes, monthly Other

APPENDIX B

TABLE 4.1
Institutions Providing Flight Training Credit

<i>Training Credit Provided</i>	<i>Number</i>	<i>Percent</i>
Yes	64	80.00
No	16	20.00
Total	80	100.00

TABLE 4.2
Number of Students Enrolled in Aviation Programs

<i>Enrollment</i>	<i>Number</i>	<i>Percent</i>
Less than 50	12	18.75
50--199	33	51.56
200--500	13	20.31
501--1000	4	6.25
More than 1,000	2	3.13
Total	64	100.00

TABLE 4.3.
Geographic Location of Postsecondary Flight Institutions

<i>Location</i>	<i>Number</i>	<i>Percent</i>
Southwest	4	6.25
Southeast	13	20.31
North Central	21	32.81
South Central	11	17.19
Northwest	4	6.25
Northeast	11	17.19
Total	64	100.00

TABLE 4.4
Institutions with In--House and Contract Flight Facilities

<i>Flight Provider</i>	<i>Number</i>	<i>Percent</i>
In--house	33	51.56
Contract facilities	31	48.44
Total	64	100.00



TABLE 4.5
Highest Degree Offered by Institution's Flight Program

<i>Degree</i>	<i>Number</i>	<i>Percent</i>
Associate	21	32.81
Baccalaureate	40	62.50
Other	3	4.69
Total	64	100.00

Note. Respondents were given an opportunity to indicate the type of degree in their "Other" response. Two reported that the institution granted a master's degree. Another reported that the institution granted no degree in the flight program.

TABLE 4.6
Level of Flight Student Progress Delay Problems by Institution

<i>Delay Problem at Institution</i>	<i>Number</i>	<i>Percent</i>
None	7	10.94
Minor	37	57.81
Major	19	29.69
Non--response	1	1.56
Total	64	100.00

TABLE 4.7
Institutional Trends in Flight Student Progress Delays

<i>Trend</i>	<i>Number</i>	<i>Percent</i>
Increasing	7	10.94
Decreasing	10	15.63
No trend	42	65.63
Not applicable	5	7.81
Total	64	100.00

TABLE 4.8
Number of Flight Student Progress Delays for Students with Jobs

<i>Difference</i>	<i>Number</i>	<i>Percent</i>
No	21	32.81
Yes, somewhat greater	27	42.19
Yes, much greater	5	7.81
Not applicable	10	15.63
Non--response	1	1.56
Total	64	100.00



TABLE 4.9
Institutional Policy Toward Prepayment of Student Flight Costs

<i>Policy</i>	<i>Number</i>	<i>Percent</i>
Prepayment required	27	42.19
Prepayment not required	37	57.81
Total	64	100.00

TABLE 4.10
Institutions Requiring a Formal Determination of Flight Student Financial Ability

<i>Requirement</i>	<i>Number</i>	<i>Percent</i>
Yes	9	14.06
No	30	46.88
Not applicable	10	15.63
Non--response	15	23.43
Total	64	100.00

TABLE 4.11
Number of Students Failing to Complete Flight Training in the Predicated Semester

<i>Non--Completion</i>	<i>Number</i>	<i>Percent</i>
None	1	1.56
1--10%	13	20.30
11--25%	22	34.38
26--50%	14	21.88
More than 50%	12	18.75
Non--response	2	3.13
Total	64	100.00



TABLE 4.12
Causal Factors in Flight Training Delays

<i>Rank: Weather</i>	<i>Number</i>	<i>Percent</i>
Weather:		
1	21	32.81
2	19	29.69
3	9	14.06
4	0	0
5	2	3.13
Non--response	13	20.31
Total	64	100.00
Finances:		
1	28	43.75
2	14	21.88
3	5	7.81
4	3	4.68
5	2	3.13
Non--response	12	18.75
Total	64	100.00
Aircraft Availability:		
1	0	0
2	3	4.68
3	19	29.69
4	11	17.19
5	4	6.25
Non--response	27	42.19
Total	64	100.00
Instructor Availability:		
1	0	0
2	1	1.56
3	6	9.38
4	21	32.81
5	8	12.50
Non--response	28	43.75
Total	64	100.00
Other:		
1	12	18.75
2	15	23.44
3	1	1.56
4	0	0
5	4	6.25
Non--response	32	50.00
Total	64	100.00

TABLE 4.13
Students Failing to Fly for Three or More Weeks During a Semester

<i>Students</i>	<i>Number</i>	<i>Percent</i>
None	8	12.50
1--10%	25	39.06
11--25%	20	31.25
26--50%	7	10.94
More than 50%	1	1.56
Non--response	3	4.69
Total	64	100.00

TABLE 4.14
Institutions Requiring the Use of Simulators or Ground Trainers in Private Pilot or Commercial Pilot Flight Courses

<i>Require Trainers</i>	<i>Number</i>	<i>Percent</i>
Yes	50	78.13
No	14	21.88
Total	64	100.00

TABLE 4.15
Institutions Requiring Simulator or Ground Trainers for Students Who Do Not Fly for Extended Periods

<i>Require Trainers</i>	<i>Number</i>	<i>Percent</i>
Yes	10	15.62
No	52	81.25
Non--response	2	3.13
Total	64	100.00

TABLE 4.16
Average Number of Flight Instructors During Private Pilot Flight Training

<i>Flight Instructors</i>	<i>Number</i>	<i>Percent</i>
One	37	57.82
Two	20	31.25
Three	4	6.25
Four	1	1.56
Other	1	1.56
Non--response	1	1.56
Total	64	100.00

Note. One respondent to Question 16 listed "Other" as the choice. The respondent noted that the student had one instructor for ground training, one for simulation, one for stage checks, and one for flight training.

TABLE 4.17
Impact of Flight Instructor Turnover

<i>Factor</i>	<i>Number</i>	<i>Percent</i>
Yes, minor factor	14	21.88
Yes, major factor	5	7.81
No	45	70.31
Total	64	100.00

TABLE 4.18
Relative Frequency of Incomplete Grades in Flight

<i>Frequency</i>	<i>Courses</i>	
	<i>Number</i>	<i>Percent</i>
No, less common	4	6.25
Yes, more common	49	76.56
No difference	10	15.63
Non--response	1	1.56
Total	64	100.00

TABLE 4.19
Institutional Policy Toward Incomplete Grades for Flight Courses

<i>Institutional Policy</i>	<i>Number</i>	<i>Percent</i>
Same	33	51.56
Less flexible	0	0
More flexible	31	48.44
Total	64	100.00

TABLE 4.20
Institutional Monitoring for Flight Student Progress

<i>Monitor Progress</i>	<i>Number</i>	<i>Percent</i>
No	7	10.94
Yes, weekly	26	40.63
Yes, biweekly	9	14.06
Yes, monthly	15	23.44
Other	7	10.94
Total	64	100.00

Note. Although the questionnaire did not provide an opportunity to indicate what was meant by an "Other" response to Question 20, three respondents provided elaboration. Two reported that student flight progress was monitored daily, and the other that progress was monitored on a semester basis.