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STATISTICAL SUMMARY: STUDY TO DETERMINE THE IFR OPERATIONAL PROFILE OF THE GENERAL AVIATION SINGLE PILOT

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STUDY TO DETERMINE THE IFR OPERATIONAL PROFILE AND PROBLEMS OF THE GENERAL AVIATION SINGLE PILOT

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INTRODUCTION

This document represents the statistical summary report on the IFR Single Pilot Survey conducted by means of a mail questionnaire sent to a sample of instrument rated pilots between October 24, 1980, and February 26, 1981. The objective of the survey was to create a data base from which could be developed an operational profile of the general aviation single pilot operating under instrument flight rules (GA SPIFR).

The purpose of this statistical summary report is to present the questionnaire data in a convenient form so that it can be reviewed and analyzed with the objective of identifying research which could lead to the elimination or reduction of the severity of specific problems experienced by the GA SPIFR.

This report can be used as a supplement to CR-3576. CR-3576 discusses the total effort encompassed in the administration of the IFR single pilot survey. It contains a GA SPIFR operational profile, selected analyses of survey data, proposed research based on results of the survey, and recommended analyses of the data.

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SURVEY DESIGN

The main elements in the survey design process were the overall survey design, questionnaire design, questionnaire pretest,and survey mailing procedure. The term "survey" means the entire process of gathering information about a large number of people. The term "questionnaire" refers to the survey instrument, the form on which the information is gathered.

Overall Survey Design

Of particular concern throughout the survey design process was to assure that the survey was designed and conducted according to the principles of survey research. A successful survey requires a worthwhile topic and the choice of a population for whom the topic has interest and psychological meaning. Both of these requirements were satisfied by the nature of the research topic and the particular airman being surveyed.

In addition, the overall survey design process incorporated the following principles of good survey design: (1) assurance of anonymity of response, (2) minimization of non-response through the use of follow-up mailings, (3) adequacy of questionnaire construction (i.e., question design, content, grouping, layout, etc.), (4) reasonable questionnaire length in terms of time to complete, (5) proper statement of the research topic in a cover letter and design of cover letter to encourage response, (6) mechanical considerations (i.e., neatness, ease of returning questionnaire, prepaid postage, timing), (7) provision of an incentive.

The selection of a sample having proportional representation by geographic location assured wide coverage and a representative sample.

Questionnaire Design

Five Ohio State University faculty members, all current instrument rated pilots with a collective total approaching 100 years of flight experience and all experienced in general aviation research, in association with NASA LaRC researchers, developed and designed the questionnaire format and text. The iteration process resulted in three versions prior to adoption of the third and final version. A copy of the questionnaire form appears in Appendix A. O.M.B. Form Approval No. 0104-S80001 was assigned.

Questionnaire Pretest

The second draft version of the questionnaire was pretested to find weaknesses and to estimate the time required to complete the questionnaire. Ten pilots were selected to participate in the pretest. As a result of the pretest, it was concluded that it would require between forty-five and sixty minutes to complete the questionnaire. It was also concluded that the questionnaire was a relatively long and complicated one to answer. However, because NASA Langley was convinced of the efficacy of the questionnaire content, and in particular the importance of the open ended questions, it was decided to proceed to a third (final) version based on this second draft version.

Survey Mailing Procedure

There were an original and two follow-up mailings of the survey. Each mailing consisted of (1) a cover letter, (2) the questionnaire, (3) a return envelope for the questionnaire, and (4) a return post card. A different cover letter was prepared for each mailing. In addition, the original cover letter was included in the two follow-up mailings. The purpose of the separate return post card was to provide a return address to which the incentive could be sent, thereby guaranteeing the anonymity of the respondents in the returned questionnaire.

An instrument plotter was selected for the incentive. The plotter provides information on holding pattern entry, VOR position, ADF relative bearing, and mileage scales for the NOAA Enroute Low Altitude Charts. The incentive mailing consisted of the plotter and a note of appreciation for the respondent's participation in the survey.

SURVEY ADMINISTRATION

Survey administration includes the following activities: (1) determine sampling procedure, (2) perform questionnaire mailing and analyze response, (3) process responses, (4) conduct nonresponse analysis.

Sampling Procedure

NASA Langley Research Center defined the airman population to be sampled as all active instrument rated private and commercial pilots and airline transport pilots. An "active" pilot is defined as one contained in the DOT/FAA Airmen Directory Files. Estimated response rate and the budget constraint on sample size were considered. It was determined that a sample size of 5000 would be reasonable.

The Aircraft Owners and Pilots Association (AOPA) Listing Service was retained to provide mailing labels and control listings. The Service utilizes the DOT/FAA Airmen Directory File, stored on magnetic tape. The File contains records of each certificated airman who has been issued a valid airman medical certificate within the twenty-five months preceding the date of the File. During early 1980, AOPA estimated that there were 170,000 active instrument rated private and commercial pilots, and 60,000 active airline transport pilots.

The Airmen Directory File is arranged in sequence alphabetically by state, then by zip code within state. This form of airman population file permits a convenient application of systematic sampling, which yields proportional representation by geographic location in the sample drawn. A systematic sampling procedure was applied to instrument rated private and commercial pilots in the file by selecting the first record at random and each 47th record thereafter. The same sampling procedure was applied to the airline transport pilots in the file, because an instrument rating code does not appear in the file for the ATP. A total sample of 4,943 was produced, consisting of 750 private and 2,889 commercial instrument rated pilots, and 1,304 ATP pilots.

The mailing labels and a corresponding control listing were obtained from AOPA. The labels and listing were developed from the FAA Airmen Directory File dated June 30, 1980, updated to August 9, 1980.

Survey Mailing and Response Analysis

Three mailings of the survey were conducted, an original and two followup mailings. The followup mailings were sent to those who had not yet returned an incentive post card. The date and size of each mailing is shown in Table 1. Survey response is indicated in Tables 2 and 3. No survey returns were processed after April 30, 1981.

TABLE 1

SPIFR SURVEY MAILINGS

Date	Number of Pieces Mailed
Oct 24, 1980	4,943
Dec 4, 1980	3,812
Feb 26, 1981	2,046
Total	10,801

TABLE 2

BASIS FOR RESPONSE RATE DETERMINATION

Item	Post Office Returns Through		
	12/4/80	2/26/81	4/30/81
Original mailing	4,943	4,943	4,943
Less: Post Office returns	153	213	265
Basis for response rate	4,790	4,730	4,678

TABLE 3

SPIFR SURVEY RESPONSE RATE

	Questionnaire Returns Through					
	12/4/80		2/26/81		4/30/81	
	Number	Rate	Number	Rate	Number	Rate
Usable	1242	26%	1810	38%	1980	42%
Unusable	44	1	150	3	231	5
Total	1286	27%	1960	41%	2211	47%

The effect of the two followup mailings was to increase the usable response rate by as much as 59%, insuring a reliable and valid survey. The overall total response rate of 47% is considered very good for a survey of this nature.

Response Processing

As the questionnaire, post office returns, and post cards were received, they were date stamped. An accession number was assigned to each questionnaire. A daily log was maintained to enable a response analysis to be made.

Much of the questionnaire contained precoded items for ease in keypunching the data. As the questionnaires were returned, responses to open ended questions were analyzed and codes developed and assigned for keypunching. In all, some 61,400 items required manual coding. In addition, there were over 1300 descriptive statement categories assigned to the answers to open ended questions.

All questions requiring coding were coded on the first one hundred questionnaires by the principal investigators in order to establish initial coding categories. All other coding was performed by ten aviation student research assistants. The students were relatively experienced in aviation. Four were flight instructors and commercial pilots, four were private pilots, and two were student pilots. All had completed the instrument ground school course. Their average flight time was 429 hours.

Ideally, all coding of open ended questions should be done by one analyst. To the extent possible, each question requiring coding was coded by one analyst. A check of the coding accuracy of each analyst

was accomplished by means of a statistical sampling. A sample of each analyst's coding was reviewed to determine if it would have been assigned the same code. The sample size was chosen to provide 95% confidence that the error in the accuracy check would not exceed 5%.

It was determined that the analysts performed at an accuracy level of 99%. Therefore, a 100% check of the coding was not considered necessary.

A coding manual was developed which served as a guide in keypunching the data. Each questionnaire required the equivalent of five computer records. In all, 9,900 records were keypunched onto an unlabeled, 9 track, 1600 BPI magnetic data tape. A record is the equivalent of a standard 80 column IBM card. The data was keypunched twice and the tapes compared to resolve keypunch errors.

All 1980 usable questionnaires and the 231 unusable responses are on file at NASA Langley Research Center. Further, two magnetic data tapes have been prepared, one containing data from the 1980 usable questionnaires returned, the other containing data from the 1619 questionnaires forming the general aviation SPIFR data set. Individuals and organizations interested in obtaining a copy of the data tapes for further analysis are encouraged to do so. Copies of the data tapes may be obtained from the National Aeronautics and Space Administration, Langley Research Center, Attn: H.P. Bergeron, MS 152E, Hampton, VA., 23665, Telephone (804) 827-3917.

Nonresponse Analysis

The important point about nonresponse is not the reduced size of the sample, but the possibility of a bias in the data in favor of the respondents. A nonresponse analysis permits the determination of the probable existence of a bias in the data.

Survey research has shown that respondents who return their questionnaire very late are roughly similar to nonrespondents. Since the questionnaires were date stamped and assigned an accession number as they were received, it was possible to carry out a nonresponse analysis by comparing late respondents to early respondents. The fifth 100 questionnaires received were compared to the last 100 questionnaires received to test the difference in response patterns for selected questions, as shown in Table 4.

As a result of the statistical tests applied, it was concluded that there was no significant difference between the early and late respondents with respect to type of airplane flown (Q.1), the year in which the instrument rating was received (Q.33), or the type of flying most often engaged in during the last twelve months (all flying and single pilot IFR flying, Q.34). However, there did appear to be a significant difference in the total time and single pilot actual instrument time flown during the last twelve months (Q.37), with the late respondents, on the average, reporting more hours flown. Since

more total flight time implies more travel away from home, it may indeed be the reason for the late response. On the other hand, there could be some bias in the data in favor of the lower time pilot. However, because there were no significant differences between the early and late respondents in the answers to Questions 1, 33, and 34, it is concluded that there is no significant bias in the data in favor of the repondents.

TABLE 4

NONRESPONSE ANALYSIS

Question	Card	Card Cols.	Test of Significance	Finding
1	1	21	Chi-square using contingency table.	No significant difference. Chi-square value = 3.62 with 4 degrees of freedom, probability = Ø.46.
33	4	57,58	"t" test on difference of means.	No significant difference. Probability = Ø.93.
34	4	65	Chi-square using contingency table.	No significant difference. Chi-square value = 12.3 with 8 degrees of freedom, probability = Ø.14.
34	4	66	Chi-square using contingency table.	No significant difference. Chi-square value = 3.52 with 6 degrees of freedom, probability = Ø.74.
37	5	6-9	"t" test on difference of means.	Significant at the 9% level. Probability = Ø.Ø9.
37	5	31-33	"t" test on difference of means.	Significant at the Ø.3% level. Probability= Ø.ØØ3.
			"f" test on homogeneity of variances.	Significant at the Ø.Ø1% level. Probability=Ø.ØØØ1.

DETERMINATION OF GA SPIFR DATA SET

It was determined that some of the 198Ø usable returns were from respondents who were not operating as a general aviation SPIFR. An elimination scheme was developed which removed these 361 respondents leaving a general aviation SPIFR data set containing 1619 questionnaires. Data contained in this Statistical Summary are based upon these 1619 questionnaires.

An examination of the make and model airplane reported in Question 1 (What type of airplane do you now fly as an IFR single pilot most often?), C1CC6-1Ø, (Card 1, Card Columns 6-1Ø), revealed that 32Ø returns should not be included in the GA SPIFR data set because the make and model reported was not a general aviation airplane. An additional and separate coding was developed from an inspection of the make and model data. The results of this new coding, C5CC57, is shown in Table 5.

TABLE 5

TYPE OF AIRPLANE SPECIAL CODING

Code	Type of Airplane	Number of Returns
Ø	No answer	7Ø
1	General aviation	166Ø
2	Air Carrier	74
3	Military	162
8	Unknown	12
9	Unusable reply	2

Question 34 (In what type of flying were you most often engaged during the last 12 months?), C4CC66 (single pilot IFR flying), was then examined on the 166Ø questionnaires which were coded as a general aviation airplane in C5CC57. Of the 166Ø questionnaires, 14 had checked air carrier, and 27 had checked military as the type of single pilot IFR flying most often engaged in during the last twelve months. These 41 questionnaires were removed from the 166Ø, leaving 1619 questionnaires in the GA SPIFR data set.

SUMMARY

This report presents the statistical summary of data resulting from a mail questionnaire survey designed to develop information on the general aviation single pilot operating under instrument flight rules. Containing detailed statistical information, it can be used as a supplement to the "Final Report: Study to Determine the IFR Operational Profile and Problems of the General Aviation Single Pilot," CR- 3576. A copy of the questionnaire appears in Appendix A. The data from each question is presented in Appendix B, with each statistical table numbered to correspond to the same question number on the questionnaire. A magnetic data tape has been prepared containing the survey data, and copies are available through NASA Langley Research Center.

APPENDIX A

IFR SINGLE PILOT SURVEY

QUESTIONNAIRE

The Ohio State University
Department of Aviation

Form Approved
O.M.B. No. 0104-S80001

IFR SINGLE PILOT SURVEY
Questionnaire

INSTRUCTIONS FOR FILLING OUT THE QUESTIONNAIRE

A Unless otherwise indicated, answer the questions in terms of how you use your instrument rating in the type of airplane you most often fly as an IFR single pilot on a flight in actual IFR conditions

B An IFR single pilot operation is defined as "A general aviation IFR flight operation which requires, by Federal Aviation Regulation or company policy, that only one instrument rated pilot perform all of the piloting functions If another person is on board (instrument rated pilot or not) and assisting (with communications and navigation, for example), it is still considered a single pilot IFR operation "

C Use a pencil

D On narrative answer questions, briefly outline your answer rather than providing a detailed explanation However, if you need more space in answering a particular question, use the space provided at the end of the questionnaire

E In all cases, when you do not have an exact answer, your best estimate is acceptable

F Check ☑ to indicate your response or fill in as indicated.

SECTION 1 - AIRPLANE AND EQUIPMENT CHARACTERISTICS

1. What type of airplane do you now fly as an IFR single pilot most often?

make and model _____

retractable gear [1] yes [2] no

controllable propeller [1] yes [2] no

year of manufacture 19_____

average cruise speed _____knots

average instrument approach speed _____knots

check one

[1] single engine, 1-3 places
[2] single-engine, 4 places and over
[3] multiengine piston
[4] turboprop
[5] turbojet

2. What kind of equipment does the airplane have? (check as applicable)

communication transceiver [1] one [2] two

navigation

VOR/LOC receiver [1] one [2] two

glide slope receiver [1] one [2] two

☐ ADF
☐ RMI
☐ marker beacon
☐ transponder
☐ altitude encoder
☐ DME
☐ RNAV

autopilot

☐ roll ☐ heading ☐ pitch ☐ altitude
☐ nav coupler

special

☐ pitot heat
☐ HSI
☐ flight director
☐ headset boom microphone
☐ oxygen
☐ cabin pressurization
☐ control surface anti-icing or de-icing
☐ propeller anti-icing
☐ windshield anti-icing
☐ weather radar
☐ non-radar thunderstorm display

☐ other (please specify) _____

SECTION 2 - PERSONAL OBSERVATIONS, EXPERIENCES, AND OPINIONS (use last page for additional space)

3 In your opinion, what is the most common error made by IFR single pilots?

49,50_____

4 What has been the <u>one</u> most serious problem which you have encountered in your experience as an IFR single pilot?

51,52_____

5 How did you handle the problem mentioned in the previous question?

53,54_____

6. Consider your last three flights as an IFR single pilot. Please note anything unanticipated which happened during those flights.

55 56_____

7. What <u>one</u> change in the system (e g., ATC, regulations, procedures, weather dissemination) your airplane and equipment, or flight training, would make your IFR single pilot flight operations easier?

57,58_____

8. Suppose that you have just purchased a single engine airplane that you plan to use for single pilot IFR flight, equipped with a single NAV/COM with LOC. You have $7,500 to spend on additional equipment. Check the equipment you would purchase.

communication

- ☐ 720 channel transceiver ($1500)
- ☐ 360 channel transceiver ($1000)

navigation

- ☐ VOR/LOC ($1500)
- ☐ glide slope ($700)
- ☐ ADF ($1700)
- ☐ marker ($350)
- ☐ transponder ($800)
- ☐ altitude encoder ($800)
- ☐ DME ($3500)
- ☐ RNAV (also requires DME) ($3500)

autopilot

- ☐ roll (wing leveler) ($1100)
- ☐ roll/heading ($1500)
- ☐ roll/heading/pitch ($3500)
- ☐ roll/heading/pitch/altitude ($5500)
- ☐ nav coupler ($600)

special

- ☐ pitot heat ($75)
- ☐ HSI ($2800)
- ☐ headset boom microphone ($150)
- ☐ weather radar ($7000)
- ☐ non-radar thunderstorm display ($5500)
- ☐ other (please specify item and cost) _____

PART 2

9. What items do you think should be included in the biennial flight review concerning instrument proficiency?

6,7____

10. What difficulties have you experienced with instrument flight instruction (including proficiency), procedures, and techniques?

8 9 ____

11. How often have you used the following preflight sources of aviation weather information?

	never	seldom	often	almost always
Direct call to FSS	[1]	[2]	[3]	[4]
Direct visit to FSS	☐	☐	☐	☐
PATWAS (telephone transcribed weather)	☐	☐	☐	☐
TWEB (radio transcribed weather)	☐	☐	☐	☐
"AM Weather" PBS TV	☐	☐	☐	☐
TV Weather	☐	☐	☐	☐
Newspaper	☐	☐	☐	☐
Other (please specify)	[1]	[2]	[3]	[4]

12 How often have you used the following inflight sources of aviation weather information?

	never	seldom	often	almost always
Direct FSS communication	[1]	[2]	[3]	[4]
EFAS (Flight Watch)	☐	☐	☐	☐
ARTCC (Center)	☐	☐	☐	☐
TWEB (radio transcribed weather)	☐	☐	☐	☐
ATIS	☐	☐	☐	☐
Other (please specify)	[1]	[2]	[3]	[4]

SECTION 3 - PERSONAL RECOMMENDATIONS

These questions are important because your answers will contribute to the design of future systems which will enhance the utility and safety of the IFR single pilot operation Considering your experience as an IFR single pilot, indicate the most common problem which you have encountered in each of the following areas and your recommended solution If you have not encountered a problem in a particular area, leave blank

13. Instrument Approaches (e g , approach charts, non-standard approach procedures, ATC demands)

Problem 24 25 ____

Solution 26 27____

14. Cockpit Environment (e g , instrument panel/controls, noise level, warning systems, lighting)

Problem 28 29 ____

Solution 30 31____

15. Navigation (e g , enroute charts, enroute procedures, radar vectors, ADF, VOR, RNAV, DME, displays/indicators)

Problem 32 33 ____

Solution 34 35 ____

16. Operations and Procedures (e g , aircraft systems, ATC, regulations, inflight data management)

Problem 36,37 ____

Solution 38 39 ____

17. Training and Proficiency (e.g., adequacy, standardization, desk top and aircraft simulators)

Problem 40 41 ____

Solution. 42,43 ____

18. Airplane Stability and Control (e g , hands off stability, use of autopilots, stall/spin, limitations of conventional control wheel)
Problem 44 45 _
Solution 46 47

19. Weather Information (e g., availability, reliability, content, presentation)
Problem 48 49
Solution 50 51 _

20. Weather Encounters (e g , precipitation, icing, thunderstorms, hail, low ceiling, low visibility, turbulence, wind shear)
Problem 52 53 _
Solution 54 55 _

21 Communications (e.g , excessive communication/frequency changes, misunderstandings, radio noise/static, audio quality, information content)
Problem 56 57 _
Solution 58 59 _

SECTION 4 - DIFFICULTY OF IFR SINGLE PILOT FLIGHT

22. As a "normal" IFR flight becomes more difficult because of work load, which aspect of your flying performance is most likely to deteriorate? (check one)
- [1] remembering ATC instructions
- [2] accurate interpretation of instruments
- [3] heading control
- [4] use of enroute charts, approach charts, and manuals
- [5] ATC communications and clearance interpretation
- [6] maintaining positional awareness
- [7] altitude control
- [8] no problems
- [9] other (please specify) _____

To what do you attribute this deterioration? _____
_____

23. During an instrument approach in actual IFR conditions, how frequently have you encountered the IFR condition indicated, and how difficult is the condition for you to handle?

IFR condition	FREQUENCY OF ENCOUNTER (check one box on each line)				DIFFICULTY (check one box on each line except when frequency is never)			
	never	seldom	often	almost always	little	some	much	extreme
normal (does not include any of the conditions which follow)	61 [1]	[2]	[3]	[4]	62 [1]	[2]	[3]	[4]
minimum ceiling and/or visibility	63 [1]	[2]	[3]	[4]	64 [1]	[2]	[3]	[4]
light or moderate icing	65 [1]	[2]	[3]	[4]	66 [1]	[2]	[3]	[4]
light or moderate turbulence	[1]	[2]	[3]	[4]	70 [1]	[2]	[3]	[4]
scattered or broken thunderstorms	71 [1]	[2]	[3]	[4]	72 [1]	[2]	[3]	[4]
strong winds	73 [1]	[2]	[3]	[4]	74 [1]	[2]	[3]	[4]
nonroutine ATC instructions	75 [1]	[2]	[3]	[4]	76 [1]	[2]	[3]	[4]

77 [1] [2] [3]

SECTION 5 - TYPICAL IFR SINGLE PILOT FLIGHT CHARACTERISTICS

24. Where do you originate most of your IFR flights?
airport name _____ 8 8 _ _ _ _
city _____ state _____ 9 0

25 What instrument approach have you most often made during the last 12 months? (check one)

[1] ILS	[4] VOR/DME	[7] LDA
[2] LOC	[5] ADF	[8] SDF
[3] VOR	[6] RNAV	[9] radar vectors

Is radar assistance available during this approach?
[1] yes [2] no

26 How frequently do you have someone assist you in the airplane during flight in actual IFR conditions?
13 [1] never [2] seldom [3] often [4] almost always
14 is this person a pilot? [1] yes [2] no
15 does he have an instrument rating? [1] yes [2] no
16 is he a required copilot? [1] yes [2] no
17 ☐ required by Federal Aviation Regulation
18 ☐ required by company policy

27. If a copilot is not required, how often would you prefer to have someone assist you in the airplane during flight in actual IFR conditions?
19 [1] never [2] seldom [3] often [4] almost always

28 What single factor has caused you most often to cancel an IFR single pilot flight just before planned departure during the last 12 months?
20 [1] I have not had to cancel a proposed IFR flight
[2] weather worse than published minimums
[3] weather beyond my personal limitations
[4] weather beyond aircraft/equipment capability
[5] equipment malfunction
[6] lack of adequate weather information
[7] lack of adequate flight publications
[8] other (please specify) _____

29. If the following weather conditions were reported to exist anywhere enroute, what would you do?

	DAY		NIGHT	
	go	not go	go	not go
light icing	1	2	1	2
moderate icing				
light turbulence				
moderate turbulence				
heavy rain				
scattered thunderstorms				
broken thunderstorms				
lines of thunderstorms				
heavy ground fog				
weather below minimums				
IFR over mountains				
IFR over water	1	2	1	2

30. At the destination airport, what are your personal minimums for making each of the following types of approaches?

	DAY ceiling (in feet)	DAY visibility (in miles)	DAY I use published minimums	NIGHT ceiling (in feet)	NIGHT visibility (in miles)	NIGHT I use published minimums
ILS	_____	_____	or	_____	_____	or
LOC	_____	_____	or	_____	_____	or
VOR	_____	_____	or	_____	_____	or
ADF	_____	_____	or	_____	_____	or

CARD 4

31. If the weather were reported to be below minimums at your destination airport, would you fly the approach?
1 yes 2 no

32. Excluding proficiency flights, during the last 12 months, how many times have you:

filed IFR?	_____
had to hold?	_____
executed a missed approach?	_____
been rerouted?	_____
diverted to an alternate?	_____
asked for an altitude change due to icing?	_____
asked for a route change due to thunderstorms?	_____
declared an emergency?	_____
requested special handling?	_____

SECTION 6 - FLYING EXPERIENCE

33. In what year did you originally receive the following certificates and/or ratings?

private	19_____	multiengine	19_____
commercial	19_____	ATP	19_____
instrument	19_____	flight instructor/instrument	19_____

34. In what type of flying were you most often engaged during the last 12 months?

	all flying (check one)	single pilot IFR flying (check one)
general aviation		
business (not for hire)	1	1
business (corporate pilot)	2	2
air taxi or charter	3	3
giving instruction	4	4
other commercial	5	5
personal (pleasure)	6	6
airline	7	7
military	8	8

35. During the last 12 months, how often, on the average, did you fly?

	VFR (check one)	on an IFR flight plan (check one)	in actual IFR conditions (check one)
less than once per month	1	1	1
about monthly	2	2	2
about twice per month	3	3	3
about four times per month	4	4	4
more than four times per month	5	5	5

36 Place yourself on a scale of all instrument pilots in terms of your opinion of your present skill, knowledge, and experience:

	low					high
skill	1	2	3	4	5	6
knowledge	1	2	3	4	5	6
experience	1	2	3	4	5	6

CARD 5

37. What is your approximate flight time in hours?

	in last 12 mos	total
total time	_____	_____
total pilot in command	_____	_____
actual instrument	_____	_____
single pilot actual instrument	_____	_____
simulated instrument in an airplane	_____	_____
ground trainer	_____	_____

38. Age:_____ **male** 1 **female** 2

39 Are there any general comments you wish to make about IFR single pilot flying which you think might be useful for us to know?

40. ADDITIONAL SPACE FOR ANSWERS TO NARRATIVE QUESTIONS (specify question number)

APPENDIX B

GENERAL AVIATION SPIFR SURVEY DATA

Appendix B is a summary printout of the G.A. SPIFR data set, 1619 of the total 1980 usable returns. The appendix consists of 39 data tables which relate directly to the 39 questions on the survey form (Appendix A). The appropriate question, with applicable coding, is repeated at the beginning of each Table. Question 1, presented at the beginning of Table B1, is repeated here with its applicable coding:

1. What type of airplane do you now fly as an IFR single pilot most often?

C1C6-10	make and model _____		
C1CC11	retractable gear	[1] yes	[2] no
C1CC12	controllable propeller	[1] yes	[2] no
C1C13-14	year of manufacture	19__	
C1C15-17	average cruise speed	_____knots	
C1C18-20	average instrument approach speed	_____knots	
C1CC21	(check one)		

[1] single engine, 1-3 places
[2] single engine, 4 places and over
[3] multiengine piston
[4] turboprop
[5] turbojet

The answers to each question are coded and stored on computer cards. Five cards were required for each subject. The first four columns of all five cards for a given subject were used to list the assigned subject number (from 1 to 1980). The fifth column was used to designate which card (from 1 to 5) contained the referenced data. Columns 6 to 79 on all five cards were used to store the answers to the questions. Each answer address code used either one of two different code formats, depending on whether the question had a closed or open-ended answer. A closed answer implies that the answer is a choice of predefined responses specified on the questionnaire. An open-ended answer implies that the answer is determined from a large or infinite number of unspecified options. Closed answer address codes used the form CxCCy; where x is the number of the card (from 1 to 5), located in column 5, on which the answer is stored, and y is the column number on that card (from 6 to 79) in which the answer is stored. Open-ended answer address codes were given a similar form, CxCy-z; where x is the card number (from 1 to 5) and y is a number (from 6 to 78) representing the first column position, and z (from 7 to 79) the last column position of the column group under which the answer is stored. In question 1, for example (see above), C1C6-10 implies that the open-ended answer, for a given subject, is stored on card 1 in columns 6 through 10. C1CC11 similarly implies that the closed answer is stored on card 1 in column 11. This coding format is used as subheadings for presenting the data in the Tables.

Although the same coding format was used throughout the questionnaire, slight differences did exist between some of the answer codes. An observation of C1C6-10 (make and model) in Table B1, for example, shows

a large number of different aircraft specified by aircraft codes (two to five digit numbers) obtained from AOPA's yellow guide to aircraft listings. FREQ is the frequency or number of aircraft listed under that specific code. PERCENT is the relative percentage of that code listing to the total population. Another example, C1CC11 (retractable gear) has codes 0,1,2, & 6. Numbers 1&2 correspond to yes and no (see question 1). The number 0 implies no block checked, ie. no response. The number 6 is explained in the Table. The FREQ and PERCENT columns have the same previously defined meanings. In a third example, C1C18-20, the numbers 0-49 and 50-59, etc. correspond to approach speeds in knots. A similar correspondence exists for all the other coded data in Appendix B. Also unless otherwise explained in a given Table, the following code notations are valid:

0 or 00 - no answer (no response)
98 or 998 - none
99 or 999 - unusable reply

Note: 0 and 00, 1 and 01, 2 and 02, --------, 9 and 09 are frequently used interchangeably

TABLE B1 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 1, QUESTION 1

SECTION 1: Airplane and Equipment Characteristics

1. What type of airplane do you now fly as an IFR single pilot most often?

C1C6-10	make and model _____		
C1CC11	retractable gear	[1] yes	[2] no
C1CC12	controllable propeller	[1] yes	[2] no
C1C13-14	year of manufacture	19__	
C1C15-17	average cruise speed	_____knots	
C1C18-20	average instrument approach speed	_____knots	
C1CC21	(check one)		

[1] single engine, 1-3 places
[2] single engine, 4 places and over
[3] multiengine piston
[4] turboprop
[5] turbojet

MAKE AND MODEL

C1C6-10*	FREQ	PERCENT
20724	238	14.700
71028	215	13.280
20727	131	8.091
20734	81	5.003
58702	77	4.756
11515	72	4.447
71032	60	3.706
11527	59	3.644
71031	50	3.088
20742	49	3.027
20737	46	2.841
11529	44	2.718
71023	41	2.532
11516	34	2.100
71034	31	1.915
71024	27	1.668
20759	26	1.606
20760	25	1.544
20733	24	1.482
11514	20	1.235
11512	14	0.865
20764	13	0.803
20726	12	0.741
83606	12	0.741
39601	11	0.679
20718	10	0.618
1417	9	0.556

MAKE AND MODEL (con.)

C1C6-10*	FREQ	PERCENT
99	8	0.494
71030	8	0.494
11536	7	0.432
12204	7	0.432
20766	7	0.432
57804	7	0.432
87804	7	0.432
98	6	0.371
20757	6	0.371
11510	5	0.309
11528	5	0.309
20768	5	0.309
20728	4	0.247
20745	4	0.247
54601	4	0.247
1411	3	0.185
11506	3	0.185
11534	3	0.185
20725	3	0.185
20732	3	0.185
20756	3	0.185
51705	3	0.185
76303	3	0.185
87805	3	0.185
1416	2	0.124
1447	2	0.124
1450	2	0.124

*Aircraft codes from AOPA's Yellow Guide to Aircraft Listings, 1978.

TABLE B1 - CONTINUED

MAKE AND MODEL

C1C6-10*	FREQ	PERCENT
11525	2	0.124
11541	2	0.124
27203	2	0.124
28026	2	0.124
30802	2	0.124
39536	2	0.124
61501	2	0.124
71020	2	0.124
71022	2	0.124
71044	2	0.124
1403	1	0.062
1406	1	0.062
1412	1	0.062
6314	1	0.062
11501	1	0.062
11508	1	0.062
11520	1	0.062
11521	1	0.062
11522	1	0.062
11526	1	0.062
11540	1	0.062
11815	1	0.062
11822	1	0.062
11823	1	0.062
12002	1	0.062
15202	1	0.062
20227	1	0.062
20723	1	0.062

MAKE AND MODEL (con.)

C1C6-10*	FREQ	PERCENT
20729	1	0.062
20731	1	0.062
20736	1	0.062
20927	1	0.062
30213	1	0.062
30219	1	0.062
39512	1	0.062
39513	1	0.062
39535	1	0.062
43008	1	0.062
45001	1	0.062
50702	1	0.062
51706	1	0.062
52631	1	0.062
53702	1	0.062
56503	1	0.062
58703	1	0.062
64023	1	0.062
64026	1	0.062
71016	1	0.062
71018	1	0.062
71027	1	0.062
71039	1	0.062
76302	1	0.062
76304	1	0.062
81428	1	0.062
87801	1	0.062

RETRACTABLE GEAR

C1CC11	FREQ	PERCENT
0	18	1.112
1	1042	64.361
2	558	34.466
6†	1	0.062

CONTROLLABLE PROP

C1CC12	FREQ	PERCENT
0	39	2.409
1	1236	76.343
2	343	21.186
4†	1	0.062

†Keypunch error.
*Aircraft codes from AOPA's Yellow Guide to Aircraft Listings, 1978.

TABLE B1 - CONTINUED

YEAR OF MANUFACTURE

C1C13-14	FREQ	PERCENT
0	64	3.953
1918	1	0.062
1945	2	0.124
1946	2	0.124
1947	7	0.432
1948	6	0.371
1949	1	0.062
1950	3	0.185
1952	2	0.124
1953	1	0.062
1954	10	0.618
1955	13	0.803
1956	10	0.618
1957	7	0.432
1958	7	0.432
1959	19	1.174
1960	28	1.729
1961	18	1.112
1962	18	1.112

YEAR OF MANUFACTURE (con.)

C1C13-14	FREQ	PERCENT
1963	18	1.112
1964	31	1.915
1965	33	2.038
1966	47	2.903
1967	58	3.582
1968	61	3.768
1969	55	3.397
1970	48	2.965
1971	17	1.050
1972	53	3.274
1973	69	4.262
1974	75	4.632
1975	83	5.127
1976	98	6.053
1977	122	7.536
1978	206	12.724
1979	216	13.342
1980	107	6.609
1981	3	0.185

AVERAGE CRUISE SPEED

C1C15-17	FREQ	PERCENT
0	11	0.679
1- 79	3	0.185
80- 89	2	0.124
90- 99	21	1.297
100-109	87	5.374
110-119	145	8.956
120-129	186	11.489
130-139	218	13.465
140-149	173	10.686
150-159	157	9.697
160-169	201	12.415
170-179	106	6.547
180-189	106	6.547
190-199	49	3.027
200-209	41	2.532
210-219	25	1.544
220-229	11	0.679
230-239	8	0.494

AVERAGE CRUISE SPEED (con.)

C1C15-17	FREQ	PERCENT
240-249	10	0.618
250-259	16	0.988
260-269	11	0.679
270-279	11	0.679
280-289	1	0.062
290-299	3	0.185
300-319	1	0.062
320-329	1	0.062
330-349	2	0.124
350-369	2	0.124
370-399	1	0.062
400-419	1	0.062
420-429	1	0.062
430-439	1	0.062
440-449	3	0.185
450-459	1	0.062
460-469	2	0.124
470 and up	1	0.062

TABLE B1 - CONCLUDED

AVERAGE INSTRUMENT APPROACH SPEED

C1C18-20	FREQ	PERCENT
0	16	0.988
50- 59	1	0.062
60- 69	20	1.235
70- 79	75	4.632
80- 89	219	13.527
90- 99	451	27.857
100-109	375	23.162
110-119	148	9.141

AVERAGE INSTRUMENT APPCH SPEED

C1C18-20	FREQ	PERCENT
120-129	253	15.627
130-139	31	1.915
140-149	21	1.297
150-179	6	0.371
180-199	1	0.062
200	1	0.062
900	1	0.062

TYPE

C1CC21	FREQ	PERCENT
0	13	0.803
1	120	7.412
2	1022	63.125
3	354	21.865
4	90	5.559
5	20	1.235

TABLE B2 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 1, QUESTION 2

2. What kind of equipment does the airplane have? (check as applicable)

C1CC22 communication transceiver [1] one [2] two

NAVIGATION

C1CC23 VOR/LOC receiver [1] one [2] two
C1CC24 glide slope receiver [1] one [2] two
C1CC25 ☐ ADF
C1CC26 ☐ RMI
C1CC27 ☐ marker beacon
C1CC28 ☐ transponder
C1CC29 ☐ altitude encoder
C1CC30 ☐ DME
C1CC31 ☐ RNAV

AUTOPILOT

C1CC32 ☐ roll
C1CC34 ☐ pitch
C1CC36 ☐ nav coupler
C1CC33 ☐ heading
C1CC35 ☐ altitude

SPECIAL

C1CC37 ☐ pitot heat
C1CC38 ☐ HSI
C1CC39 ☐ flight director
C1CC40 ☐ headset boom microphone
C1CC41 ☐ oxygen
C1CC42 ☐ cabin pressurization
C1CC43 ☐ other (please specify)
C1CC44 ☐ control surface anti-icing or de-icing
C1CC45 ☐ propeller anti-icing
C1CC46 ☐ windshield anti-icing
C1CC47 ☐ weather radar
C1CC48 ☐ non-radar thunderstorm display

COM. TRANSCEIVER

C1CC22	FREQ	PERCENT
0	22	1.359
1	80	4.941
2	1517	93.700

ADF

C1CC25	FREQ	PERCENT
0	102	6.300
1	1517	93.700

VOR/LOC RECEIVER

C1CC23	FREQ	PERCENT
0	10	0.618
1	184	11.365
2	1425	88.017

RMI

C1CC26	FREQ	PERCENT
0	1268	78.320
1	351	21.680

GLIDE SLOPE RECEIVER

C1CC24	FREQ	PERCENT
0	127	7.844
1	1151	71.093
2	341	21.062

MARKER BEACON

C1CC27	FREQ	PERCENT
0	78	4.818
1	1541	95.182

TABLE B2 - CONTINUED

TRANSPONDER

C1CC28	FREQ	PERCENT
0	34	2.100
1	1585	97.900

AUTOPILOT ALTITUDE

C1CC35	FREQ	PERCENT
0	1027	63.434
1	592	36.566

ALTITUDE ENCODER

C1CC29	FREQ	PERCENT
0	545	33.663
1	1074	66.337

AUTOPILOT NAV COUPLER

C1CC36	FREQ	PERCENT
0	811	50.093
1	808	49.907

DME

C1CC30	FREQ	PERCENT
0	602	37.183
1	1017	62.817

PITOT HEAT

C1CC37	FREQ	PERCENT
0	96	5.930
1	1523	94.070

RNAV

C1CC31	FREQ	PERCENT
0	1275	78.752
1	344	21.248

HSI

C1CC38	FREQ	PERCENT
0	1153	71.217
1	466	28.783

AUTOPILOT ROLL

C1CC32	FREQ	PERCENT
0	579	35.763
1	1040	64.237

FLIGHT DIRECTOR

C1CC39	FREQ	PERCENT
0	1355	83.694
1	264	16.306

AUTOPILOT HEADING

C1CC33	FREQ	PERCENT
0	619	38.233
1	1000	61.767

HEADSET BOOM MICROPHONE

C1CC40	FREQ	PERCENT
0	709	43.792
1	910	56.208

AUTOPILOT PITCH

C1CC34	FREQ	PERCENT
0	970	59.914
1	649	40.086

OXYGEN

C1CC41	FREQ	PERCENT
0	1140	70.414
1	479	29.586

TABLE B2 - CONCLUDED

CABIN PRESSURIZATION

C1CC42	FREQ	PERCENT
0	1434	88.573
1	185	11.427

WINDSHIELD ANTI-ICING

C1CC46	FREQ	PERCENT
0	1282	79.185
1	337	20.815

OTHER

C1CC43	FREQ	PERCENT
0	1551	95.800
1	68	4.200

WEATHER RADAR

C1CC47	FREQ	PERCENT
0	1319	81.470
1	300	18.530

ANTI-ICING/DE-ICING

C1CC44	FREQ	PERCENT
0	1291	79.741
1	328	20.259

NON-RADAR TH-STORM DISPLAY

C1CC48	FREQ	PERCENT
0	1590	98.209
1	29	1.791

PROP ANTI-ICING

C1CC45	FREQ	PERCENT
0	1211	74.799
1	408	25.201

TABLE B3 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 2, QUESTION 3

SECTION 2: Personal Observations, Experiences, and Opinions

3. In your opinion, what is the most common error made by IFR single pilots?
C1C49-50

C1C49-50*	FREQ	PERCENT
2	266	16.430
6	185	11.427
1	133	8.215
0	107	6.609
4	92	5.683
20	90	5.559
21	83	5.127
3	65	4.015
8	55	3.397
5	50	3.088
15	47	2.903
99	42	2.594
13	40	2.471
11	36	2.224
28	36	2.224
7	34	2.100
18	33	2.038
22	32	1.977
10	25	1.544

C1C49-50*	FREQ	PERCENT
27	22	1.359
12	21	1.297
31	21	1.297
16	11	0.679
14	10	0.618
17	10	0.618
24	9	0.556
26	9	0.556
9	8	0.494
19	8	0.494
30	7	0.432
23	6	0.371
25	6	0.371
29	6	0.371
33	4	0.247
32	3	0.185
34	3	0.185
36	3	0.185
35	1	0.062

*Refer to code explanation on pages 27-28

TABLE B3 - CONTINUED

3. In your opinion, what is the most common error made by IFR single pilots?

00 - No answer
99 - Unusable reply

01 - Exceeding/inaccurate assessment of personal limitations/capabilities
02 - Not planning ahead
03 - Allowing skills to deteriorate
04 - Misunderstanding/failure to understand ATC instructions/procedures
05 - Poor instrument scanning/interpretation/monitoring

06 - Over confidence/ignorance in being able to handle weather/exceeding personal weather limitations/capabilities
07 - Altitude control
08 - Not understanding weather
09 - Heading control
10 - Flying IFR with inadequate equipment

11 - Poor communications technique
12 - Allowing knowledge to deteriorate/inadequate knowledge.
13 - Inaccurate use of charts and publications
14 - Not scanning for traffic
15 - Insufficient concentration/distraction

16 - Heading and altitude control
17 - Inaccurate use of NAV equipment
18 - Positional awareness (pilot doesn't know where he is)
19 - Not using instrument rating
20 - Violating minimums

21 - Allowing proficiency/currency to deteriorate (3 & 12 combined)
22 - Overdependence on system
23 - IFR/VFR transition
24 - Poor judgment
25 - Complacency

26 - Inadequate knowledge of equipment
27 - Failure to comply with ATC instructions
28 - Getting behind the airplane
29 - Failure to use checklists
30 - Pilot Fatigue

TABLE B3 - CONCLUDED

31 - Obtaining an inadequate weather briefing
32 - Disorientation (vertigo)
33 - "Get-there -itus"
34 - Flying IFR when not current
35 - Overcorrecting during high winds

36 - Not enough IFR training

TABLE B4 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 2, QUESTION 4

4. What has been the one most serious problem which you have encountered in your experience as an IFR single pilot?
C1C51-52

C1C51-52*	FREQ	PERCENT
2	260	16.059
5	116	7.165
9	108	6.671
0	90	5.559
3	76	4.694
27	65	4.015
13	62	3.830
33	62	3.830
6	55	3.397
10	55	3.397
28	50	3.088
24	49	3.027
4	43	2.656
7	41	2.532
37	38	2.347
1	34	2.100
23	30	1.853
18	28	1.729
8	27	1.668
14	24	1.482
99	23	1.421
46	21	1.297
30	19	1.174
17	18	1.112
35	18	1.112
16	17	1.050
11	16	0.988

C1C51-52*	FREQ	PERCENT
21	16	0.988
31	14	0.865
12	13	0.803
19	12	0.741
34	10	0.618
22	9	0.556
25	9	0.556
49	9	0.556
20	8	0.494
41	8	0.494
26	7	0.432
38	7	0.432
44	7	0.432
42	6	0.371
45	6	0.371
15	5	0.309
47	5	0.309
32	4	0.247
36	4	0.247
29	3	0.185
43	3	0.185
39	2	0.124
40	2	0.124
48	2	0.124
50	2	0.124
51	1	0.062

*Refer to code explanations on pages 30-31

TABLE B4 - CONTINUED

4. What has been the one most serious problem which you have encountered in your experience as an IFR single pilot?

00 - No answer
99 - Unusable reply

01 - Navigation equipment failure/malfunction (aboard airplane)
02 - Icing (structural or induction system)
03 - Workload
04 - ATC clearance changes /frequency changes
05 - Thunderstorms

06 - Electrical system/equipment failure
07 - Engine out approach/engine failure/engine malfunction
08 - Unknown traffic
09 - Unforecast/unanticipated weather
10 - Understanding ATC clearances/procedures

11 - Instrument interpretation/scan
12 - Weather knowledge
13 - Communications equipment failure/malfunction (aboard airplane)
14 - Atmospheric turbulence
15 - Violating minimums

16 - ATC operational demands (e.g., fast descents, close in turns to final approach course) (pilot is uncomfortable with ATC request)
17 - Aircraft equipment failure/malfunction
18 - Planning ahead
19 - Positional awareness (pilot doesn't know where he is)
20 - Saturated communication channels

21 - Low fuel state
22 - IFR/VFR transition (during instrument approach)
23 - Inadequate weather information/unavailability of weather information
24 - No problems
25 - Concentration/distraction

26 - Lack of aircraft familiarity
27 - Lack of proficiency
28 - Loss of aircraft control/disorientation (vertigo)
29 - Inability to comply with ATC clearances
30 - ATC forgetting about pilot/ATC behind traffic

TABLE B4 - CONCLUDED

31 - Inadequately equipped IFR airplane
32 - Autopilot malfunction/failure
33 - Flight instrument malfunction/failure
34 - Reading/interpreting charts during approach
35 - Fatigue

36 - Maintaining heading/altitude
37 - Incorrect ATC clearance/radar vectors
38 - Radio communications failure (not airplane)
39 - Flight plan route changes
40 - Inadequate instrument approach facilities

41 - ATC clearance delay
42 - Fog
43 - Complying with FARs
44 - NAVAID failure/malfunction (ATC)
45 - "Get-there -itus"

46 - Controller error (nonspecific)
47 - Preferential treatment to airlines/military/large aircraft
48 - Air traffic congestion
49 - Bad communications reception
50 - Inability to get IFR clearance departing uncontrolled airport

51 - Complacency

TABLE B5 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 2, QUESTION 5

5. How did you handle the problem mentioned in the previous question? C1C53-54

PROBLEM* C1C51-52	SOLUTION† C1C53-54	FREQ
0	0	90
1	17	9
1	3	8
1	21	6
1	23	4
1	24	2
1	0	1
1	2	1
1	5	1
1	8	1
1	11	1
2	2	161
2	11	39
2	3	19
2	21	8
2	17	7
2	99	7
2	0	5
2	20	4
2	5	3
2	8	3
2	24	2
2	14	1
2	22	1
3	3	46
3	17	7
3	10	4
3	13	4
3	99	4
3	0	3
3	12	2
3	23	2
3	4	1
3	11	1
3	18	1
3	21	1
4	3	12
4	13	5
4	4	4
4	17	4
4	0	3
4	9	3
4	21	3
4	99	3
4	5	2
4	2	1
4	16	1
4	22	1
4	25	1
5	2	27
5	3	20
5	17	15
5	18	13
5	11	12
5	5	9
5	21	9
5	20	3
5	99	3
5	12	1
5	14	1
5	22	1
5	24	1
5	25	1
6	24	21
6	6	9
6	11	8
6	3	5
6	1	4
6	2	2
6	21	2
6	5	1
6	8	1
6	23	1
6	99	1
7	11	10
7	17	9
7	21	9
7	3	4
7	14	4
7	99	3

*Refer to problem code explanations on pages 30-31
†Refer to solution code explanations on page 36

TABLE B5 - CONTINUED

PROBLEM* C1C51-52	SOLUTION† C1C53-54	FREQ
7	8	2
8	3	11
8	7	6
8	17	5
8	99	3
8	0	1
8	4	1
9	8	22
9	11	19
9	2	14
9	3	12
9	17	10
9	20	8
9	99	8
9	5	5
9	21	3
9	12	2
9	10	1
9	14	1
9	18	1
9	22	1
9	24	1
10	13	21
10	3	9
10	17	4
10	99	4
10	4	3
10	10	3
10	16	3
10	21	3
10	9	2
10	5	1
10	7	1
10	27	1
11	3	5
11	10	4
11	21	2
11	4	1
11	5	1
11	12	1
11	17	1
11	23	1
12	11	7
12	3	2
12	5	2
12	0	1

PROBLEM* C1C51-52	SOLUTION† C1C53-54	FREQ
12	10	1
13	21	31
13	24	7
13	3	6
13	5	5
13	11	3
13	19	2
13	1	1
13	2	1
13	4	1
13	8	1
13	12	1
13	13	1
13	23	1
13	99	1
14	18	6
14	2	5
14	3	4
14	5	3
14	11	3
14	8	1
14	17	1
14	99	1
15	23	2
15	3	1
15	5	1
15	99	1
16	3	3
16	99	3
16	5	2
16	17	2
16	25	2
16	4	1
16	11	1
16	16	1
16	18	1
16	22	1
17	3	5
17	17	3
17	5	2
17	21	2
17	99	2
17	0	1
17	1	1
17	11	1
17	14	1

*Refer to problem code explanations on pages 30-31
†Refer to solution code explanations on page 36

TABLE B5 - CONTINUED

PROBLEM* C1C51-52	SOLUTION† C1C53-54	FREQ
18	3	17
18	10	2
18	15	2
18	17	2
18	0	1
18	2	1
18	5	1
18	21	1
18	23	1
19	3	3
19	17	3
19	2	2
19	0	1
19	5	1
19	13	1
19	99	1
20	21	3
20	3	1
20	5	1
20	13	1
20	18	1
20	99	1
21	11	7
21	17	3
21	3	2
21	99	2
21	5	1
21	21	1
22	3	5
22	10	2
22	0	1
22	1	1
23	20	9
23	99	6
23	3	4
23	17	4
23	11	3
23	0	1
23	5	1
23	14	1
23	21	1
24	0	44
24	99	3
24	3	1
24	11	1
25	3	3

PROBLEM* C1C51-52	SOLUTION† C1C53-54	FREQ
25	21	3
25	0	1
25	9	1
25	10	1
26	3	3
26	26	3
26	0	1
27	10	33
27	3	8
27	0	7
27	5	6
27	11	3
27	23	2
27	99	2
27	12	1
27	15	1
27	17	1
27	21	1
28	3	27
28	21	12
28	23	4
28	99	2
28	0	1
28	11	1
28	12	1
28	17	1
28	24	1
29	3	1
29	17	1
29	99	1
30	13	8
30	3	4
30	17	3
30	21	2
30	5	1
30	99	1
31	3	5
31	12	3
31	11	2
31	0	1
31	17	1
31	23	1
31	99	1
32	3	3
32	99	1
33	21	27

*Refer to problem code explanations on pages 30-31
†Refer to solution code explanations on page 36

TABLE B5 - CONTINUED

PROBLEM* C1C51-52	SOLUTION† C1C53-54	FREQ
33	3	11
33	17	7
33	0	3
33	24	3
33	11	2
33	14	2
33	23	2
33	99	2
33	4	1
33	6	1
33	22	1
34	3	3
34	23	2
34	4	1
34	7	1
34	17	1
34	21	1
34	99	1
35	3	8
35	15	4
35	5	2
35	11	2
35	23	1
35	99	1
36	4	2
36	3	1
36	10	1
37	13	8
37	2	6
37	17	5
37	3	4
37	23	4
37	4	2
37	25	2
37	99	2
37	7	1
37	11	1
37	18	1
37	21	1
37	22	1
38	21	4
38	2	1
38	3	1
38	13	1
39	3	2
40	8	2

PROBLEM* C1C51-52	SOLUTION† C1C53-54	FREQ
41	5	4
41	3	1
41	4	1
41	17	1
41	25	1
42	3	2
42	8	2
42	11	1
42	23	1
43	3	1
43	10	1
43	11	1
44	21	2
44	23	2
44	3	1
44	5	1
44	17	1
45	11	3
45	5	2
45	99	1
46	13	7
46	99	5
46	3	3
46	17	3
46	21	2
46	7	1
47	3	2
47	99	2
47	13	1
48	11	1
48	99	1
49	13	4
49	3	1
49	12	1
49	17	1
49	21	1
49	99	1
50	3	1
50	17	1
51	3	1
99	99	14
99	0	3
99	11	3
99	3	1
99	21	1
99	23	1

*Refer to problem code explanations on pages 30-31
†Refer to solution code explanations on page 36

TABLE B5 - CONCLUDED

5. How did you handle the problem mentioned in the previous question? C1C53-54

00 - No answer
99 - Unusable reply

01 - Obtained ATC clearance to VFR conditions
02 - Obtained ATC clearance to different altitude/heading
03 - Worked harder/smarter (planning ahead)
04 - Complied with ATC
05 - Selected no action

06 - Minimized electrical load
07 - Took evasive action (traffic conflict/flight into terrain)
08 - Diverted to alternate
09 - Wrote down clearance
10 - Obtained instrument recency of experience/refresher training

11 - Cancelled/terminated flight
12 - Limit flights to adequately equipped IFR airplane
13 - Requested ATC clarification
14 - Returned for landing
15 - Changed personal habits

16 - Asked ATC to slow down
17 - Requested ATC assistance/cooperation
18 - Slowed airplane
19 - Replied with transponder
20 - Closer monitoring of weather

21 - Took routine action/followed standard procedure
22 - Cancelled IFR
23 - Missed approach
24 - Proceeded until reaching VFR
25 - Refused clearance

26 - Familiarization with aircraft
27 - Used a headset

TABLE B6 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 2, QUESTION 6

6. Consider your last three flights as an IFR single pilot. Please note anything unanticipated which happened during those flights. C1C55-56

C1C55-56*	FREQ	PERCENT
1	543	33.539
8	285	17.603
0	228	14.083
7	79	4.880
10	63	3.891
12	57	3.521
16	48	2.965
5	34	2.100
2	33	2.038
21	31	1.915
19	29	1.791
14	21	1.297
99	20	1.235
17	17	1.050
23	17	1.050
6	14	0.865
13	13	0.803
11	12	0.741
3	10	0.618
43	8	0.494
22	7	0.432
28	7	0.432
9	4	0.247

C1C55-56*	FREQ	PERCENT
41	4	0.247
33	3	0.185
40	3	0.185
15	2	0.124
18	2	0.124
26	2	0.124
30	2	0.124
34	2	0.124
35	2	0.124
36	2	0.124
37	2	0.124
38	2	0.124
4	1	0.062
20	1	0.062
24	1	0.062
25	1	0.062
27	1	0.062
31	1	0.062
32	1	0.062
39	1	0.062
44	1	0.062
45	1	0.062
46	1	0.062

*Refer to code explanation on pages 38-39

TABLE B6 - CONTINUED

6. Consider your last three flights as an IFR single pilot. Please note anything unanticipated which happened during those flights.

00 - No answer
99 - Unusable reply

01 - Nothing unanticipated happened
02 - Inappropriate vectoring
03 - Inappropriate ATC clearance
04 - Unable to visually acquire traffic called by ATC radar
05 - Flight instrument malfunction/failure

06 - Near miss/potential conflict
07 - ATC clearance changes/routing different than filed
08 - Unforecast/unanticipated weather
09 - Loss of radio communications
10 - ATC operational demands (pilot asked to do something he didn't feel comfortable with)

11 - Loss of ATC radar/radar contact
12 - Nav/transponder equipment malfunction/failure
13 - Autopilot malfunction/failure
14 - Electrical system malfunction/failure
15 - Chart information change

16 - Communications equipment failure (on board aircraft)
17 - Misunderstanding/failure to understand ATC instructions/procedures
18 - ATC communications congestion
19 - Engine malfunction/failure (including power loss, magneto problem, fuel starvation/exhaustion/contamination)
20 - Unable to receive NAVAID identifier

21 - ATC delays/holding patterns
22 - Deviation around weather
23 - Aircraft equipment failure/malfunction
24 - Cancelled/terminated flight
25 - Altimeter setting error

26 - Altimeter encoder failure/malfunction
27 - Experienced hypoxia
28 - Used incorrect IAP chart/did not have IAP chart
29 - Airport closed without NOTAM

TABLE B6 - CONCLUDED

30 - ATC cancelled IFR flight plan
31 - Lost sight of airport on circling approach
32 - Experienced disorientation (vertigo)
33 - ARTCC lost flight plan/ARTCC computer failure
34 - Improper handoff by controller
35 - Lack of pilot proficiency

36 - Encountered flock of birds
37 - Misidentified airport on breakout
38 - Encountered volcanic ash
39 - Airborne weather radar failure
40 - NAVAID failure/malfunction (ATC)

41 - Controller error (nonspecific)
42 - (Not used)
43 - Pilot error (nonspecific)
44 - Misidentified a NAVAID
45 - Smoke/exhaust filled cabin

46 - RVR less than visibility from airplane at DH

TABLE B7 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 2, QUESTION 7

7. What one change in the system (e.g., ATC, regulations, procedures, weather dissemination) your airplane and equipment, or flight training, would make your IFR single pilot flight operations easier?
C1C57-58

C1C57-58*†	FREQ	PERCENT
0	210	12.971
40	119	7.350
14	102	6.300
52	73	4.509
99	71	4.385
16	66	4.077
8	52	3.212
27	52	3.212
38	45	2.779
54	43	2.656
46	36	2.224
22	32	1.977
96	30	1.853
13	27	1.668
18	27	1.668
51	27	1.668
63	27	1.668
3	26	1.606
20	26	1.606
28	25	1.544
98	25	1.544
23	24	1.482
9	23	1.421
17	23	1.421
31	22	1.359
1	21	1.297
29	21	1.297
35	21	1.297
45	20	1.235
30	17	1.050
24	16	0.988
49	16	0.988
7	15	0.926
15	12	0.741
32	12	0.741
41	12	0.741
48	12	0.741
55	11	0.679
71	11	0.679
4	9	0.556
2	7	0.432
5	7	0.432
66	7	0.432
6	6	0.371
19	6	0.371
26	6	0.371
42	6	0.371
58	6	0.371
77	6	0.371
11	5	0.309
12	5	0.309
47	5	0.309
50	5	0.309
53	5	0.309
79	5	0.309
39	4	0.247
43	4	0.247
61	4	0.247
72	4	0.247
81	4	0.247
36	3	0.185
57	3	0.185
64	3	0.185
76	3	0.185
87	3	0.185
90	3	0.185
21	2	0.124
37	2	0.124
56	2	0.124
62	2	0.124
65	2	0.124
67	2	0.124
68	2	0.124
69	2	0.124

*Refer to code explanations on pages 42-44
†Due to the limited space of code C1C57-58 and the large number of answers given for question 7, some answers had to be filed under code C5C55-56, see page 45

TABLE B7 - CONTINUED

C1C57-58*†	FREQ	PERCENT
74	2	0.124
75	2	0.124
78	2	0.124
10	1	0.062
25	1	0.062
33	1	0.062
34	1	0.062
44	1	0.062

C1C57-58*†	FREQ	PERCENT
60	1	0.062
70	1	0.062
73	1	0.062
80	1	0.062
82	1	0.062
84	1	0.062
85	1	0.062
86	1	0.062

*Refer to code explanations on pages 42-44

†Due to the limited space of code C1C57-58 and the large number of answers given for question 7, some answers had to be filed under code C5C55-56, see page 45

TABLE B7 - CONTINUED

7. What one change in the system (e.g., ATC, regulations, procedures, weather dissemination) your airplane and equipment, or flight training, would make your IFR single pilot flight operations easier?

00 - No answer
96 - Go to columns 55, 56 on Card 5
98 - Nonresponsive because change recommended is already a required/accepted regulation or procedure
99 - Unusable reply

01 - More ATC flexibility for routing and altitude changes
02 - FSS briefers should be less opinionated about weather
03 - Improved radar coverage
04 - Minimize communcations contact
05 - Redundant electrical/vacuum/communications system

06 - Simplify avionics design from user standpoint/standardize
07 - Increased use of RNAV, DECCA, LORAN C
08 - Require actual IFR experience during flight training
09 - Improved availability of weather information to ATC
10 - Plain language weather reports

11 - Permit enroute ATC routings through/over terminal areas
12 - Disseminate ATC routing practices
13 - Easier access to flight planning services/FSS
14 - Use of flight director and/or autopilot
15 - More ATC awareness of airplane performance capabilities

16 - Weather dissimenation through ATC
17 - Airborne radar for thunderstorm avoidance
18 - More ATC awareness of single pilot workload limitations
19 - More exposure to the ATC system during flight training
20 - Simplify FAR's

21 - Developing a professional attitude in pilots
22 - Use advanced technology for information transfer (vs. 06)
23 - Minimize ATC routing changes
24 - Improve approach facilities
25 - More coordination between ARTCC and Flight Watch

26 - Annual IFR procedures review
27 - Minimize ATC frequency changes
28 - More information to pilots about ATC actions/intentions
29 - Require deicing equipment

TABLE B7 - CONTINUED

30 - More use of direct routings
31 - More use of flight simulators in flight training
32 - Require boom microphone/push to talk switch
33 - Substitute holding patterns for daisy chains
34 - Arrange approach charts alphabetically by city
35 - Encourage PIREPS

36 - Better aircraft speakers
37 - More reliable autopilot
38 - Upgrade airplane equipment
39 - Require second transceiver
40 - Better, more up to date weather information/briefing

41 - Require all aircraft to have an altitude encoder
42 - More weather reporting stations
43 - Give single pilots priority
44 - Require FAA to give all checkrides
45 - More control of VFR traffic

46 - Better/more professional controllers
47 - Require collision avoidance system
48 - Simplify entire ATC system/improve ATC system
49 - Eliminate/simplify TCA's
50 - More SIDS and STARS

51 - Clearer communications/controller slow down in talking
52 - More stringent requirements to receive and maintain instrument rating
53 - Build more reliever airports
54 - Wouldn't change anything
55 - Eliminate preferential treatment to larger aircraft/airlines

56 - More COM frequencies
57 - More emphasis on radio procedures
58 - Faster processing of flight plans
59 - Pilots should fly as cleared
60 - More "tower to tower" clearances

61 - Eliminate useless training procedures/maneuvers/better training
62 - Standardize ATC language
63 - Require DME
64 - Further restrict single pilot IFR flying

TABLE B7 - CONTINUED

65 - Lower approach minimum altitudes
66 - Require copilot in IFR conditions
67 - Limit duty time for all pilots
68 - More space in cockpit for publications
69 - Require pilot training for controllers
70 - Make flight and/or written exams more realistic

71 - Better weather training for pilots
72 - Abolish intersection holds/simplify holding procedures
73 - Require altitude alerter
74 - More basic attitude instrument flying during training
75 - Hold local FAA/pilot meetings on IFR rules (like VFR safety meetings)

76 - More stringent requirements to receive/maintain flight instructor rating
77 - Greater use of radar vectoring
78 - Greater respect for helicopters by ATC
79 - Less control of IFR traffic by ATC
80 - Better reporting of NAVAIDS that are out of service

81 - Improve/simplify approach plates
82 - Heads-up display use
83 - Reduce IFR traffic congestion
84 - Accurate fuel/fuel flow gauges
85 - Make pilots more aware of inflight services available to them

86 - Keep control towers open 24 hours
87 - Raise instrument minimums
88 - Improve pilot knowledge of ATC procedures, systems
89 - Keep high altitude traffic out of low altitude structure
90 - Eliminate flight time requirement for instrument rating flying IFR FAR 135

TABLE B7 - CONTINUED

C5C55-56 is an extension of code C1C57-58 to accompany question 7.

7. What one change in the system (e.g., ATC, regulations, procedures, weather dissemination), your airplane and equipment, or flight training, would make your IFR single pilot flight operations easier? C5CC55-56

C5C55-56*	FREQ	PERCENT
97	1589	98.147
9	3	0.185
13	3	0.185
18	3	0.185
1	2	0.124
6	2	0.124
17	2	0.124
3	1	0.062
4	1	0.062
5	1	0.062
7	1	0.062

C5C55-56*	FREQ	PERCENT
8	1	0.062
10	1	0.062
11	1	0.062
12	1	0.062
15	1	0.062
16	1	0.062
19	1	0.062
21	1	0.062
22	1	0.062
25	1	0.062
26	1	0.062

*Refer to code explanations on page 46

TABLE B7 - CONCLUDED

7. What one change in the system (e.g., ATC, regulations, procedures, weather dissemination) your airplane and equipment, or flight training, would make your IFR single pilot flight operations easier?

00 - No Answer
97 - Go to columns 57, 58 on Card 1
98 - None
99 - Unusable Reply

01 - Create airport instrument approaches to be used soley for instrument practice
02 - Lower landing fees at large airports
03 - Standardize/simplify all instrument approaches
04 - Reinstate spin training
05 - Less uncontrolled airspace

06 - Incorporate "beep" tone on ATC transmitter to insure positive communications contact during long periods of no radio contact
07 - Update/modernize the FAA
08 - Further separate high/low performance traffic
09 - Cockpit standardization
10 - Further restrict single-engine/single-pilot IFR

11 - Relax airplane system inspection requirements
12 - Combine VFR/IFR charts
13 - Simplify enroute charts/improve enroute charts
14 - Allow hood time without checkpilot
15 - Eliminate SIDS & STARS

16 - Put weather briefing form on back of flight plan forms
17 - Improve airplane owner's manual
18 - Require transponder
19 - Increased number of NAVAIDS
20 - Eliminate profile descents

21 - Simplify departure procedures
22 - More controlled airspace
23 - Better annunciator equipment on aircraft
24 - Eliminate "see and be seen" rule
25 - Eliminate weather reporting requirement for landing under FAR 135

26 - Improve airport lighting

TABLE B8 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 2, QUESTION 8

8. Suppose that you have just purchased a single engine airplane that you plan to use for single pilot IFR flight, equipped with a NAV/COM with LOC. You have $7500 to spend on additional equipment. Check the equipment you would purchase.

COMMUNICATION

C1CC59 ☐ 720 channel transceiver ($1500)
C1CC60 ☐ 360 channel transceiver ($1000)

NAVIGATION

C1CC61 ☐ VOR/LOC ($1500)
C1CC62 ☐ glide slope ($700)
C1CC63 ☐ ADF ($1700)
C1CC64 ☐ marker ($350)
C1CC65 ☐ transponder ($800)
C1CC66 ☐ altitude encoder ($800)
C1CC67 ☐ DME ($3500)
C1CC68 ☐ RNAV (also requires DME) ($3500)

AUTOPILOT

C1CC69 ☐ roll (wing leveler) ($1100)
C1CC70 ☐ roll/heading ($1500)
C1CC71 ☐ roll/heading/pitch ($3500)
C1CC72 ☐ roll/heading/pitch/ altitude ($5500)
C1CC73 ☐ nav coupler ($600)

SPECIAL

C1CC74 ☐ pitot heat ($75)
C1CC75 ☐ HSI ($2800)
C1CC76 ☐ headset boom microphone ($150)
C1CC77 ☐ other (please specify item and cost) _____
C1CC78 ☐ weather radar ($700)
C1CC79 ☐ non-radar thunderstorm display ($5500)

720 CHANNEL COM TRANSCEIVER

C1CC59	FREQ	PERCENT
0	828	51.143
1	791	48.857

GLIDE SLOPE

C1CC62	FREQ	PERCENT
0	251	15.503
1	1368	84.497

360 CHANNEL COM TRANSCEIVER

C1CC60	FREQ	PERCENT
0	923	57.011
1	696	42.989

ADF

C1CC63	FREQ	PERCENT
0	580	35.825
1	1039	64.175

VOR/LOC

C1CC61	FREQ	PERCENT
0	362	22.359
1	1257	77.641

MARKER

C1CC64	FREQ	PERCENT
0	287	17.727
1	1332	82.273

TABLE B8 - CONCLUDED

TRANSPONDER

C1CC65	FREQ	PERCENT
0	91	5.621
1	1528	94.379

ALTITUDE ENCODER

C1CC66	FREQ	PERCENT
0	734	45.337
1	885	54.663

DME

C1CC67	FREQ	PERCENT
0	1282	79.185
1	337	20.815

RNAV

C1CC68	FREQ	PERCENT
0	1600	98.826
1	19	1.174

AUTOPILOT ROLL

C1CC69	FREQ	PERCENT
0	1412	87.214
1	207	12.786

AUTOPILOT ROLL/HEADING

C1CC70	FREQ	PERCENT
0	1179	72.823
1	440	27.177

AUTOPILOT ROLL/HEADING/PITCH

C1CC71	FREQ	PERCENT
0	1557	96.170
1	62	3.830

AUTOPILOT ROLL/HEADING/
PITCH/ALTITUDE

C1CC72	FREQ	PERCENT
0	1585	97.900
1	34	2.100

AUTOPILOT NAV COUPLER

C1CC73	FREQ	PERCENT
0	1430	88.326
1	189	11.674

PITOT HEAT

C1CC74	FREQ	PERCENT
0	371	22.915
1	1248	77.085

HSI

C1CC75	FREQ	PERCENT
0	1565	96.665
1	54	3.335

HEADSET BOOM MICROPHONE

C1CC76	FREQ	PERCENT
0	757	46.757
1	862	53.243

OTHER

C1CC77	FREQ	PERCENT
0	1543	95.306
1	76	4.694

WEATHER RADAR

C1CC78	FREQ	PERCENT
0	1605	99.135
1	14	0.865

NON-RADAR TH-STORM DISPLAY

C1CC79	FREQ	PERCENT
0	1612	99.568
1	7	0.432

TABLE B9 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 2, QUESTION 9

9. What items do you think should be included in the biennial flight review concerning instrument proficiency?
C2C6-7

C2C6-7*	FREQ	PERCENT
12	331	20.445
0	175	10.809
20	96	5.930
2	95	5.868
7	94	5.806
5	84	5.188
9	66	4.077
13	63	3.891
15	53	3.274
28	50	3.088
4	45	2.779
99	45	2.779
6	42	2.594
24	33	2.038
18	31	1.915
11	28	1.729
35	27	1.668
50	25	1.544
36	16	0.988
23	15	0.926
1	13	0.803
26	11	0.679
54	11	0.679
3	10	0.618
32	10	0.618
55	10	0.618
27	9	0.556
29	8	0.494
30	8	0.494
31	8	0.494
43	8	0.494
53	6	0.371

C2C6-7*	FREQ	PERCENT
8	5	0.309
19	5	0.309
22	5	0.309
25	5	0.309
33	5	0.309
37	5	0.309
42	5	0.309
52	5	0.309
10	4	0.247
16	4	0.247
17	4	0.247
39	4	0.247
58	4	0.247
60	4	0.247
21	3	0.185
34	3	0.185
48	3	0.185
44	2	0.124
45	2	0.124
47	2	0.124
49	2	0.124
56	2	0.124
14	1	0.062
38	1	0.062
40	1	0.062
41	1	0.062
46	1	0.062
51	1	0.062
57	1	0.062
59	1	0.062
61	1	0.062
62	1	0.062

*Refer to code explanations on pages 50-52

TABLE B9 - CONTINUED

9. What items do you think should be included in the biennial flight review concerning instrument proficiency?

00 - No answer
99 - Unusable reply

01 - Discontinue BFR
02 - Partial panel
03 - Nonradar procedures
04 - Nothing/none
05 - Unusual attitudes

06 - Preflight planning procedures
07 - Federal Aviation Regulations
08 - Simulated failure of flight instruments
09 - Nonprecision instrument approach(es)
10 - IFR/VFR transition (breakout)

11 - ATC procedures update
12 - Instrument approach procedure(s)
13 - Same as IRA Flight Test Guide
14 - Holding pattern to approach transition
15 - Holding pattern procedures

16 - Engine out procedures while IFR
17 - VOR orientation/tracking
18 - Actual IFR flight
19 - SID's/STAR's
20 - Basic instrument flying skills

21 - ATC clearance changes
22 - Distractions
23 - Radio communications failure procedures
24 - No change
25 - Pilot's ability to plan ahead/positional awareness

26 - Copying/understanding ATC clearances
27 - Understanding instrument approach procedures
28 - Handling emergencies while IFR
29 - More use of simulators
30 - Instrument departure procedures

TABLE B9 - CONTINUED

31 - TCA Procedures
32 - Require annual (or more frequent) checkride and written exam
33 - LOC/BC approach
34 - GO - NO GO decision making
35 - Review of weather information

36 - Missed approach procedures
37 - Stall/spin recovery
38 - Better view limiting devices (hoods)
39 - Require one actual approach in last 30 days
40 - Smooth flying technique

41 - Five year BFR in actual IFR conditions
42 - BFR to be flown in highest category and class for which rated
43 - Radio procedures
44 - Require 3 hours of dual
45 - Stated proficiency level requirements

46 - Single VOR IFR flying
47 - Enroute procedures
48 - Include those items which most often cause accidents
49 - Nothing, if pilot is current
50 - Require short cross country flight, in actual or simulated IMC, including ILS, VOR, ADF approaches

51 - Flight planning airborne
52 - Written examinations
53 - Program similar to AOPA Instrument Refresher Course
54 - Oral review on all phases
55 - Chart reading and interpretation

56 - Instrument approach to an unfamiliar airport
57 - Use of autopilot
58 - Single engine instrument approach in a twin
59 - Crosswind landing
60 - A checkride that reviews all phases

TABLE B9 - CONCLUDED

61 - Depends on individual currency
62 - Only FAA Designated Examiner should give BFR

TABLE B10 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 2, QUESTION 10

10. What difficulties have you experienced with instrument flight instruction (including proficiency), procedures, and techniques? C2C8-9

C2C8-9*	FREQ	PERCENT
1	370	22.854
0	299	18.468
99	111	6.856
19	69	4.262
27	68	4.200
15	66	4.077
38	58	3.582
22	57	3.521
13	54	3.335
3	35	2.162
12	33	2.038
51	30	1.853
18	23	1.421
10	22	1.359
8	19	1.174
29	18	1.112
41	16	0.988
25	15	0.926
26	15	0.926
39	13	0.803
43	11	0.679
46	11	0.679
47	11	0.679
98	11	0.679
9	10	0.618
14	9	0.556
21	9	0.556
44	9	0.556
7	8	0.494
23	8	0.494
28	8	0.494
34	8	0.494
54	8	0.494
4	7	0.432
2	6	0.371
48	6	0.371
11	5	0.309
17	5	0.309
33	5	0.309
52	5	0.309
62	5	0.309
6	4	0.247
31	4	0.247
65	4	0.247
20	3	0.185
24	3	0.185
35	3	0.185
45	3	0.185
61	3	0.185
5	2	0.124
30	2	0.124
32	2	0.124
40	2	0.124
42	2	0.124
56	2	0.124
60	2	0.124
64	2	0.124
66	2	0.124
67	2	0.124
16	1	0.062
37	1	0.062
49	1	0.062
50	1	0.062
53	1	0.062
57	1	0.062
58	1	0.062
59	1	0.062
63	1	0.062
68	1	0.062
69	1	0.062
70	1	0.062
71	1	0.062
72	1	0.062
74	1	0.062
75	1	0.062

*Refer to code explanations on pages 54-56

TABLE B10 - CONTINUED

10. What difficulties have you experienced with instrument flight instruction (including proficiency), procedures, and techniques?

00 - No answer
99 - Unusable reply

01 - No difficulties (none)
02 - Hurrying through maneuvers
03 - Cost
04 - Overdependence on ATC
05 - Insufficient autopilot training

06 - Flight instructor's indifference toward pilot's proficiency
07 - Lack of flight instructor availability
08 - Planning ahead
09 - Present recency of experience FAR's inadequate
10 - Insufficient emphasis on fundamentals

11 - Concentration/distraction
12 - Instrument interpretation/scan
13 - Holding patterns
14 - Insufficient exposure to IFR system (e.g., doing all training in one geographical area, not enough cross country)
15 - Insufficient actual IFR training (in IMC)

16 - Understanding aviation jargon
17 - Timing
18 - Insufficient ground instruction (including preflight/post flight discussion)
19 - Lack of instructor standardization
20 - Handling ATC clearances

21 - Insufficient exposure to weather recognition
22 - Inefficient/insufficient/ill prepared flight instruction
23 - Insufficient flight simulator availability
24 - Getting behind the airplane
25 - Communications

26 - Insufficient emergency procedure training
27 - ADF procedures/techniques
28 - ATC operational demands
29 - Misunderstanding/failure to understand ATC instructions/procedures
30 - Need more flight time

TABLE B10 - CONTINUED

31 - Positional awareness
32 - Unusual attitudes
33 - Pilot performance standards too low
34 - Lack of ATC cooperation
35 - Instructor handling too much of workload

36 - Loss of communications procedures
37 - Too much simulation
38 - Keeping current, maintaining proficiency
39 - Understanding what the instructor wants (communication)
40 - Pilot's lack of confidence

41 - Instructor's lack of experience in weather
42 - IFR/VFR Transition
43 - Instructor's personality
44 - Maintaining heading and altitude
45 - Inaccurate use of charts and publications

46 - Instructor's impatience and lack of interest
47 - Availability of approach facilities
48 - Keeping up with the FAR's and FAR changes
49 - Students' unwillingness to fly in actual IMC
50 - Flying into bad weather

51 - Finding experienced instructor
52 - VOR procedures/techniques
53 - Non standard instrument panels
54 - Flying an ILS
55 - Wind shear on final

56 - Procedure turns
57 - Use of RNAV
58 - Lack of professionalism in instructors
59 - LOC/BC approaches
60 - Airports too busy for practice instrument approaches

TABLE B10 - CONCLUDED

61 - Violating minimums
62 - Instructor not demanding enough
63 - Student's overconfidence
64 - Interpretation of FAR's
65 - Inadequate training in the classroom

66 - Inflight procedures - fly airplane, navigate, communicate
67 - Poor equipment
68 - Vertigo
69 - Letting autopilot handle too much of the workload
70 - Instructor trying to get all the money he can from the student

71 - Scanning for VFR traffic
72 - FAA written examination is unrealistic
73 - More teaching and less testing
74 - Nonprecision approaches
75 - Nonuse of checklist

TABLE B11 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 2, QUESTION 11

11. How often have you used the following preflight sources of aviation weather information?

		never	seldom	often	almost always
Direct call to FSS	C2CC10	1	2	3	4
Direct visit to FSS	C2CC11	☐	☐	☐	☐
PATWAS (telephone transcribed weather)	C2CC12	☐	☐	☐	☐
TWEB (radio transcribed weather)	C2CC13	☐	☐	☐	☐
"AM Weather" PBS-TV	C2CC14	☐	☐	☐	☐
TV Weather	C2CC15	☐	☐	☐	☐
Newspaper	C2CC16	☐	☐	☐	☐
Other (please specify)	C2CC17	1	2	3	4

CALL FSS

C2CC10	FREQ	PERCENT
0	40	2.471
1	0	0.000
2	26	1.606
3	335	20.692
4	1218	75.232

AM WEATHER

C2CC14	FREQ	PERCENT
0	181	11.180
1	608	37.554
2	456	28.166
3	285	17.603
4	89	5.497

VISIT FSS

C2CC11	FREQ	PERCENT
0	91	5.621
1	63	3.891
2	796	49.166
3	552	34.095
4	117	7.227

TV WEATHER

C2CC15	FREQ	PERCENT
0	110	6.794
1	296	18.283
2	376	23.224
3	573	35.392
4	264	16.306

PATWAS

C2CC12	FREQ	PERCENT
0	187	11.550
1	421	26.004
2	624	38.542
3	275	16.986
4	112	6.918

NEWSPAPER

C2CC16	FREQ	PERCENT
0	185	11.427
1	695	42.928
2	395	24.398
3	261	16.121
4	83	5.127

TWEB

C2CC13	FREQ	PERCENT
0	198	12.230
1	445	27.486
2	599	36.998
3	314	19.395
4	63	3.891

OTHER

C2CC17	FREQ	PERCENT
0	1302	80.420
1	142	8.771
2	25	1.544
3	78	4.818
4	72	4.447

TABLE B12 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 2, QUESTION 12

12. How often have you used the following inflight sources of aviation weather information?

		never	seldom	often	almost always
Direct FSS communication	C2CC18	[1]	[2]	[3]	[4]
EFAS (Flight Watch)	C2CC19	☐	☐	☐	☐
ARTCC (Center)	C2CC20	☐	☐	☐	☐
TWEB (radio transcribed weather)	C2CC21	☐	☐	☐	☐
ATIS	C2CC22	☐	☐	☐	☐
Other (please specify)	C2CC23	[1]	[2]	[3]	[4]

FSS

C2CC18	FREQ	PERCENT
0	76	4.694
1	8	0.494
2	238	14.700
3	860	53.119
4	437	26.992

TWEB

C2CC21	FREQ	PERCENT
0	231	14.268
1	297	18.345
2	644	39.778
3	375	23.162
4	72	4.447

EFAS

C2CC19	FREQ	PERCENT
0	136	8.400
1	114	7.041
2	367	22.668
3	725	44.781
4	277	17.109

ATIS

C2CC22	FREQ	PERCENT
0	67	4.138
1	10	0.618
2	97	5.991
3	528	32.613
4	917	56.640

ARTCC

C2CC20	FREQ	PERCENT
0	140	8.647
1	72	4.447
2	517	31.933
3	647	39.963
4	243	15.009

OTHER

C2CC23	FREQ	PERCENT
0	1435	88.635
1	93	5.744
2	21	1.297
3	42	2.594
4	28	1.729

TABLE B13-A - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 13, PROBLEM

SECTION 3: Personal Recommendations

In this section pilots were asked to indicate the most common problem which they had encountered in each of the areas listed (questions 13-21) and recommend a solution.

13. Instrument Approaches (e.g., approach charts, non-standard approach procedures, ATC demands).
C2C24-25 Problem

C2C24-25*	FREQ	PERCENT
0	722	44.595
4	243	15.009
1	79	4.880
50	64	3.953
98	53	3.274
2	40	2.471
16	34	2.100
6	33	2.038
10	25	1.544
26	24	1.482
21	22	1.359
99	22	1.359
5	20	1.235
24	20	1.235
39	14	0.865
20	12	0.741
13	11	0.679
27	10	0.618
22	9	0.556
34	9	0.556
52	9	0.556
55	9	0.556
14	8	0.494
18	8	0.494
19	8	0.494
29	8	0.494
8	7	0.432
9	7	0.432
38	7	0.432

C2C24-25*	FREQ	PERCENT
41	7	0.432
51	7	0.432
7	6	0.371
30	5	0.309
53	5	0.309
11	4	0.247
15	4	0.247
32	4	0.247
33	4	0.247
57	4	0.247
3	3	0.185
31	3	0.185
37	3	0.185
12	2	0.124
23	2	0.124
25	2	0.124
28	2	0.124
35	2	0.124
42	2	0.124
46	2	0.124
47	2	0.124
36	1	0.062
40	1	0.062
44	1	0.062
45	1	0.062
49	1	0.062
54	1	0.062
56	1	0.062

*Refer to code explanations on pages 60-61

TABLE B13-A - CONTINUED

13. Instrument Approaches (e.g., approach charts, nonstandard approach procedures, ATC demands) Problems

00 - No Answer
98 - None
99 - Unusable Reply

01 - Chart format/content
02 - ATC requested approach speeds too fast
03 - Positional awareness on ADF approach
04 - ATC demands including during high workload conditions (e.g., communications, vectoring, clearance changes, rapid descents)
05 - Inaccurate radar vectoring

06 - Approach procedures too complicated/ unfamiliar
07 - Not enough ILS approaches
08 - Lack of pilot proficiency
09 - Too frequent use of visual approach
10 - Keeping charts, publication changes current

11 - Circling approach safety factor
12 - Need for more instrument approaches
13 - No place in cockpit to store or hold approach plates
14 - Missed approach procedures
15 - Military-civil ATC coordination

16 - Understanding ATC clearance and instructions/too fast
17 - Confusion of aircraft call numbers
18 - Keeping approach at proper speed and timing
19 - Non precision approach
20 - Controllers understanding of pilots' problems

21 - Mixing of jet and small aircraft traffic
22 - Lack of standardization
23 - Availability of SIDs and charts
24 - Nonstandard procedures
25 - DME ARC

26 - Charts difficult to handle
27 - Overload of air traffic
28 - Lack of adequate airport lighting
29 - Cost of approach charts
30 - Obstructions in approach area not depicted well on chart

TABLE B13-A - CONCLUDED

31 - Frequency congestion
32 - Minimum altitudes
33 - Lack of instrumentation, equipment and aids
34 - Delays
35 - Radar vectors and/or non-standard procedures causing confusion and lack of ETA and EFC

36 - Unreported VFR traffic in MVFR
37 - More cross-reference points available
38 - Poor or improper handling by ATC
39 - Not knowing what approach to expect
40 - Switching from high to low altitude charts

41 - Pilot determining his/her position/location
42 - Problem of coordinating ATC and training flight
43 - Windshield glare
44 - MOA's and the altitudes ATC assigns
45 - Obtaining weather information for an instrument approach

46 - An organized cockpit system of scanning instruments to visual approach
47 - Confusion of IFR and VFR traffic
48 - Noise abatement procedures
49 - No approach chart
50 - Charts too cluttered/too busy to read easily

51 - Chart print too small/poor readability
52 - Important chart information not depicted in an orderly/clear manner
53 - Chart print illegible at night
54 - Radar vector minimums are not on charts
55 - Not enough information on chart

56 - Difficulty in finding given approach quickly
57 - Difficult to transfer and understand transition from enroute charts to approach

TABLE B13-B - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 13, SOLUTION

13. Instrument Approaches (e.g., approach charts, non-standard approach procedures, ATC demands).
C2C24-25 Problem
C2C26-27 Solution

PROBLEM* C2C24-25	SOLUTION† C2C26-27	FREQ
0	0	721
0	13	1
1	7	20
1	11	14
1	6	8
1	0	6
1	21	6
1	53	4
1	56	4
1	1	3
1	42	3
1	54	3
1	55	2
1	2	1
1	4	1
1	19	1
1	35	1
1	44	1
1	59	1
2	3	8
2	32	8
2	15	5
2	0	3
2	13	3
2	8	2
2	12	2
2	26	2
2	39	2
2	4	1
2	5	1
2	27	1
2	42	1
2	99	1
3	4	1
3	27	1
3	29	1
4	3	50
4	13	48
4	5	19

PROBLEM* C2C24-25	SOLUTION† C2C26-27	FREQ
4	0	14
4	8	14
4	45	12
4	16	11
4	39	10
4	23	9
4	46	9
4	47	8
4	99	6
4	21	4
4	34	4
4	15	3
4	29	3
4	32	3
4	10	2
4	26	2
4	35	2
4	98	2
4	4	1
4	12	1
4	18	1
4	22	1
4	25	1
4	38	1
4	43	1
4	58	1
5	8	4
5	13	4
5	3	3
5	45	3
5	11	1
5	22	1
5	25	1
5	26	1
5	32	1
5	46	1
6	4	6
6	42	4
6	0	3

*Refer to problem code explanations on pages 60-61
†Refer to solution code explanations on pages 66-68

TABLE B13-B - CONTINUED

PROBLEM* C2C24-25	SOLUTION† C2C26-27	FREQ
6	13	3
6	21	3
6	9	2
6	11	2
6	15	2
6	99	2
6	5	1
6	6	1
6	12	1
6	26	1
6	35	1
6	98	1
7	14	5
7	0	1
8	4	5
8	13	2
9	0	2
9	13	1
9	16	1
9	42	1
9	46	1
9	98	1
10	17	17
10	7	4
10	0	2
10	11	1
10	99	1
11	20	2
11	4	1
11	18	1
12	12	1
12	18	1
13	19	8
13	0	1
13	11	1
13	30	1
14	21	4
14	35	2
14	39	1
14	42	1
15	3	2
15	8	1
15	21	1
16	10	10
16	13	8
16	3	5

PROBLEM* C2C24-25	SOLUTION† C2C26-27	FREQ
16	0	3
16	5	2
16	8	1
16	22	1
16	38	1
16	45	1
16	98	1
16	99	1
18	4	3
18	29	2
18	19	1
18	36	1
18	99	1
19	4	3
19	13	1
19	25	1
19	27	1
19	42	1
19	59	1
20	8	5
20	3	3
20	13	3
20	16	1
21	26	4
21	32	4
21	8	3
21	0	2
21	15	2
21	21	2
21	14	1
21	16	1
21	52	1
21	98	1
21	99	1
22	21	6
22	3	1
22	7	1
22	99	1
23	28	2
24	21	4
24	42	3
24	10	2
24	13	2
24	14	2
24	27	2
24	99	2

*Refer to problem code explanations on pages 60-61
†Refer to solution code explanations on pages 66-68

TABLE B13-B - CONTINUED

PROBLEM* C2C24-25	SOLUTION† C2C26-27	FREQ
24	8	1
24	45	1
24	46	1
25	4	2
26	30	13
26	0	4
26	7	2
26	19	2
26	33	2
26	42	1
27	32	2
27	0	1
27	8	1
27	15	1
27	21	1
27	22	1
27	26	1
27	38	1
27	45	1
28	31	2
29	41	4
29	0	2
29	17	1
29	99	1
30	11	2
30	56	2
30	55	1
31	5	2
31	22	1
32	29	2
32	21	1
32	25	1
33	26	2
33	20	1
33	29	1
34	13	2
34	22	2
34	3	1
34	4	1
34	15	1
34	16	1
34	26	1
35	13	2
36	16	1
37	11	1

PROBLEM* C2C24-25	SOLUTION† C2C26-27	FREQ
37	37	1
37	59	1
38	8	3
38	3	2
38	0	1
38	99	1
39	13	5
39	45	5
39	40	2
39	3	1
39	10	1
40	59	1
41	13	2
41	0	1
41	3	1
41	16	1
41	25	1
41	46	1
42	16	1
42	26	1
44	0	1
45	40	1
46	19	1
46	29	1
47	0	1
47	51	1
49	13	1
50	53	36
50	56	9
50	0	5
50	11	2
50	21	2
50	42	2
50	57	2
50	99	2
50	6	1
50	13	1
50	54	1
50	98	1
51	54	5
51	0	1
51	56	1
52	53	3
52	56	3
52	6	1

*Refer to problem code explanations on pages 60-61
†Refer to solution code explanations on pages 66-68

TABLE B13-B - CONTINUED

PROBLEM* C2C24-25	SOLUTION† C2C26-27	FREQ
52	54	1
52	55	1
53	55	2
53	42	1
53	53	1
53	54	1
54	59	1
55	59	6
55	58	2
55	55	1

PROBLEM* C2C24-25	SOLUTION† C2C26-27	FREQ
56	60	1
57	59	2
57	6	1
57	21	1
98	98	36
98	0	16
98	7	1
99	99	14
99	0	7
99	21	1

*Refer to problem code explanations on pages 60-61
†Refer to solution code explanations on pages 66-68

TABLE B13-B - CONTINUED

13. Instrument Approaches (e.g., approach charts, nonstandard approach procedures, ATC demands) Solutions

00 - No Answer
98 - None
99 - Unusable Reply

01 - Arrange approach charts by city name
02 - Add 100 Knot speed to time to missed approach chart format
03 - Better controller awareness
04 - More thorough flight instruction/proficiency
05 - Minimize ATC communications demands/clearance changes

06 - Add color to approach charts
07 - Standardize NOS and commercial approach charts
08 - More thorough training of ATC
09 - More standardization of approaches
10 - Request ATC clarification

11 - Change chart format/content
12 - Apply personal approach minimums
13 - Request ATC assistance/cooperation
14 - Provide more ILS approaches
15 - Provide different approaches for airplanes of different speed

16 - Change ATC procedures
17 - Less frequent chart updates, procedure changes
18 - Provide more instrument approaches
19 - Redesign cockpit and/or chart holding device
20 - Raise minimums

21 - Standardize
22 - More controllers
23 - No deviation from given approach during high workload conditions
24 - Use full aircraft call number
25 - Require/incorporate use of DME

26 - More facilities
27 - Eliminate
28 - Better distribution of SIDS and charts
29 - Additional cockpit instrumentation/aids
30 - Use of single sheet approach charts

TABLE B13-B - CONTINUED

31 - Install adequate lighting at airports with instrument approach
32 - Better or corrective spacing of aircraft having different speeds
33 - Make approach plates more durable (e.g., plastic coated)
34 - Earlier handoff to tower from ATC
35 - Simplify procedures

36 - More airspeeds in time to missed approach table
37 - More flight testing
38 - Assign different/more frequencies
39 - Provide a boundary after which there is to be no frequency, airspeed, or clearance changes
40 - Keep ATIS up to date

41 - Devise system to reduce cost of charts, e.g., broken down "for sale" by state or type of approach
42 - Familiarize oneself, study
43 - Provide minimum safe altitude on STARS
44 - Coordinate SIDS with ATC facility handling the area
45 - Allow more time/give pilot advanced notice

46 - Allow/standardize use of "Full Published Approach"
47 - Provide single frequency for approach
48 - Redesign of approach to allow pilot more time &/or maneuvering space
49 - Greater usage of ident squawk to avoid confusion
50 - Abolish procedures which compromise safest performance of aircraft

51 - Provide IFR climb and descent corridors
52 - Have smaller aircraft keep speed up
53 - Unclutter, simplify charts
54 - Larger print/format on charts
55 - Better contrast and print on charts

56 - Important information highlighted and/or depicted in an orderly manner
57 - Organize chart information on to separate charts (only one approach per chart)
58 - Publish area procedures that one can expect
59 - Put more information on charts
60 - Better indexing of approach charts

TABLE B13-B -CONCLUDED

61 - An alternative to charts
62 - Better proof reading of charts

TABLE B14-A - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 14, PROBLEM

14. Cockpit Environment (e.g., instrument panel/controls, noise level, warning systems, lighting).
C2C28-29 Problem

C2C28-29*	FREQ	PERCENT
0	738	45.584
1	220	13.589
2	178	10.994
5	94	5.806
7	90	5.559
98	59	3.644
99	38	2.347
4	28	1.729
3	19	1.174
15	18	1.112
25	12	0.741
8	9	0.556
18	8	0.494
26	8	0.494
29	8	0.494
16	7	0.432
31	7	0.432
21	6	0.371
11	5	0.309
13	5	0.309
6	4	0.247
22	4	0.247
33	4	0.247
42	4	0.247
20	3	0.185
23	3	0.185

C2C28-29*	FREQ	PERCENT
27	3	0.185
32	3	0.185
40	3	0.185
41	3	0.185
43	3	0.185
44	3	0.185
10	2	0.124
24	2	0.124
9	1	0.062
12	1	0.062
17	1	0.062
19	1	0.062
34	1	0.062
35	1	0.062
36	1	0.062
37	1	0.062
38	1	0.062
39	1	0.062
45	1	0.062
46	1	0.062
47	1	0.062
48	1	0.062
50	1	0.062
52	1	0.062
53	1	0.062
59	1	0.062

*Refer to code explanations on pages 70-71

TABLE B14-A - CONTINUED

14. Cockpit Environment (e.g., instrument panel/controls, noise level, warning systems, lighting) Problems

00 - No Answer
98 - None
99 - Unusable reply

01 - Inadequate cabin/instrument panel lighting/approach chart lighting
02 - High cabin noise level
03 - Organizing charts, flight logs, etc., for ease of use
04 - Warning lights
05 - Instrument panel control arrangement/design

06 - ADF display design/VOR display design
07 - Standardization
08 - Color of instrument panel lighting
09 - ON/OFF status of instruments and radios
10 - Multiple lighting sources

11 - Misinterpretation of instrument readings
12 - Stall warning inadequate
13 - Accessibility of switches
14 - No collision avoidance system
15 - Accuracy & adequacy of flight/engine instruments/avionics

16 - Aural warning distractions
17 - No weather avoidance system
18 - Insufficient instrumentation (NAV, COM, HS, etc.)
19 - Cockpit temperature
20 - Nuisance of stall warning/warning systems

21 - Lighting system failure
22 - Cowl flap/gear/flap location
23 - Nonessential conversation
24 - Copying/remembering clearances
25 - Microphone accessibility

26 - Lighting intensity, spot lighting control
27 - Radio "switchology"

TABLE B14-A CONCLUDED

28 - Uncomfortable seats
29 - Cockpit size and design
30 - Left hand kneeboard lighting
31 - Communications fidelity
32 - Location of COMM speakers
33 - Holding altitude and heading
34 - Digital radio lights
35 - Audible "station passage" system

36 - Faulty door latch
37 - No autopilot
38 - No windshield wipers
39 - IFR to VFR transition
40 - Ineffectice defroster/deice

41 - Panel lighting reflection
42 - Interpretation of raw data
43 - Radio design
44 - Inoperative/unreadable gear lights
45 - Wing lighting

46 - Innovation in cockpit design
47 - Accessibility of lighting control
48 - Non adjustable seating
49 - Garbage/clutter
50 - Pilot unfamiliar with aircraft avionics

51 - Noise from windshield wipers
52 - Lack of familiarity with aircraft
53 - Instrumentation too sophisticated

TABLE B14-B - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 14, SOLUTION

14. Cockpit Environment (e.g., instrument panel/controls, noise level, warning systems, lighting).
C2C28-29 Problem
C2C30-31 Solution

PROBLEM* C2C28-29	SOLUTION† C2C30-31	FREQ
0	0	727
0	3	6
0	4	3
0	8	1
0	22	1
1	11	92
1	3	68
1	6	27
1	0	14
1	23	7
1	99	6
1	5	1
1	9	1
1	24	1
1	26	1
1	29	1
1	98	1
2	1	73
2	7	47
2	3	28
2	0	14
2	99	12
2	6	1
2	27	1
2	45	1
2	46	1
3	21	6
3	0	3
3	3	2
3	23	2
3	99	2
3	2	1
3	20	1
3	28	1
3	47	1
4	4	13
4	3	7
4	10	3
4	99	2

PROBLEM* C2C28-29	SOLUTION† C2C30-31	FREQ
4	0	1
4	32	1
4	36	1
5	3	70
5	17	10
5	99	6
5	0	3
5	9	2
5	8	1
5	41	1
5	53	1
6	3	2
6	0	1
6	98	1
7	3	76
7	99	7
7	0	4
7	5	1
7	13	1
7	17	1
8	11	5
8	3	2
8	6	1
8	99	1
9	4	1
10	0	1
10	99	1
11	99	3
11	9	1
11	22	1
12	10	1
13	3	3
13	20	1
13	48	1
15	4	8
15	3	3
15	99	3
15	0	2
15	17	1

*Refer to problem code explanations on pages 70-71
†Refer to solution code explanations on pages 74-75

TABLE B14-B - CONTINUED

PROBLEM* C2C28-29	SOLUTION† C2C30-31	FREQ
15	26	1
16	3	1
16	16	1
16	24	1
16	27	1
16	32	1
16	36	1
16	40	1
17	14	1
18	3	2
18	17	2
18	0	1
18	27	1
18	30	1
18	99	1
19	3	1
20	0	1
20	16	1
20	99	1
21	11	4
21	3	1
21	99	1
22	3	2
22	99	2
23	7	2
23	99	1
24	22	2
25	7	11
25	49	1
26	24	4
26	6	2
26	3	1
26	11	1
27	3	1
27	25	1
27	99	1
29	3	7
29	0	1
31	0	2
31	7	2
31	99	2
31	37	1
32	3	2
32	7	1
33	3	1
33	8	1
33	31	1
33	33	1
34	3	1
35	3	1
36	99	1
37	15	1
38	99	1
39	8	1
40	3	1
40	35	1
40	99	1
41	24	2
41	3	1
42	2	2
42	4	1
42	10	1
43	3	1
43	39	1
43	99	1
44	3	2
44	24	1
45	11	1
46	42	1
47	44	1
48	0	1
50	2	1
52	3	1
53	3	1
59	8	1
98	0	56
98	98	2
98	8	1
99	99	22
99	4	7
99	0	3
99	15	2
99	3	1
99	11	1
99	33	1
99	38	1

*Refer to problem code explanations on pages 70-71
†Refer to solution code explanations on pages 74-75

TABLE B14-B - CONTINUED

14. Cockpit Environment (e.g., instrument panel/controls, noise level, warning systems, lighting) Solutions

00 - No answer
98 - None
99 - Unusable reply

01 - More noise insulation (soundproofing)
02 - Instruction on the matter/practice
03 - Redesign (including standardization)/more research/information
04 - Annunciator panel/warning system
05 - Voluntary manufacturer compliance

06 - Integral instrument lighting
07 - Use ear plugs/headset/handsoff COMM
08 - Incorporate heads up display
09 - Digital display
10 - Use of audio warning

11 - More lighting sources/various color and brighter lighting
12 - Collision avoidance system
13 - Adequate familiarization with instrument layout
14 - Weather avoidance equipment
15 - Autopilot

16 - Minimize warning systems
17 - Use of integrated displays (HSI, FD)
18 - Incorporating pilot suggestions in design
19 - Minimize unessential cockpit conversations
20 - General cockpit organization

21 - Yoke clamp fixture
22 - Alerter/reminder devices (for heading, altitude, etc.)
23 - Lighted chart holder
24 - Adjustable intensity for lighting
25 - Programmable radios

26 - Thorough maintenance
27 - Purchase new aircraft/more instrumentation/and/or equipment
28 - Standardized NAV chart size
29 - Enlarge instruments

TABLE B14-B - CONCLUDED

30 - Backup NAV/COM
31 - Wing leveler
32 - Audio volume control
33 - Radar altimeter
34 - Noise attenuating microphone
35 - Redesign window defroster

36 - Vary audio warning tones
37 - Tone control in transceivers
38 - Flight monitor computers
39 - Display type NAVAID with frequency (e.g. VOR 114.5)
40 - Voice warning system

41 - Reduce instrument size
42 - Nonstandardization
43 - Dim covers on lights
44 - Lighting control on yoke
45 - Adjusting aircraft power

46 - Aural warnings heard through headsets
47 - Approach plate holder in middle of instrument panel
48 - Radio channel indicator
49 - Push to talk switch
50 - Airblast windshield wipers

51 - SFA implementation
52 - On-off switch for warning systems
53 - Appropriately located armrest

TABLE B15-A - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 15, PROBLEM

15. Navigation (e.g., enroute charts, enroute procedures, radar vectors, ADF, VOR, RNAV, DME, displays/indicators).
C2C32-33 Problem

C2C32-33*	FREQ	PERCENT
0	962	59.419
98	105	6.485
99	65	4.015
20	64	3.953
2	62	3.830
6	44	2.718
24	31	1.915
7	30	1.853
5	25	1.544
13	23	1.421
28	21	1.297
35	17	1.050
11	15	0.926
27	14	0.865
34	11	0.679
15	8	0.494
17	8	0.494
19	8	0.494
1	7	0.432
8	6	0.371
16	6	0.371
4	5	0.309
30	4	0.247
33	4	0.247
41	4	0.247
42	4	0.247
47	4	0.247
3	3	0.185
14	3	0.185
21	3	0.185
23	3	0.185
54	3	0.185
9	2	0.124
10	2	0.124
32	2	0.124

C2C32-33*	FREQ	PERCENT
43	2	0.124
44	2	0.124
49	2	0.124
50	2	0.124
59	2	0.124
62	2	0.124
69	2	0.124
18	1	0.062
22	1	0.062
25	1	0.062
29	1	0.062
31	1	0.062
36	1	0.062
37	1	0.062
38	1	0.062
39	1	0.062
40	1	0.062
48	1	0.062
51	1	0.062
52	1	0.062
53	1	0.062
55	1	0.062
56	1	0.062
57	1	0.062
58	1	0.062
60	1	0.062
61	1	0.062
63	1	0.062
64	1	0.062
68	1	0.062
70	1	0.062
71	1	0.062
74	1	0.062
75	1	0.062

*Refer to code explanations on pages 77-79

TABLE B15-A - CONTINUED

15. Navigation (e.g., enroute charts, enroute procedures, radar vectors, ADF, VOR, RNAV, DME, display/indicators) Problems

00 - No answer
98 - None
99 - Unusable reply

01 - Inadequate radar coverage
02 - Radar vectors
03 - NAV display failure indication
04 - Inadequately detailed flight planning charts
05 - Inflexibility of ATC in approving RNAV routes/direct routes

06 - Chart clutter
07 - NAV display design
08 - Workload
09 - Complex terminal area procedures
10 - Keeping terminal arrivals too high

11 - Positional awareness
12 - Single NAV receiver
13 - Charts are difficult to hold in place
14 - Unable to obtain altitude changes
15 - High cost of avionics

16 - Inadequate ATC services
17 - Insufficient terrain features on IFR charts
18 - Innaccurate groundspeed readout on RNAV function
19 - Too frequent changes in enroute charts/approach charts
20 - Chart design

21 - Too many instruments
22 - Forgetting assigned altitude
23 - Lack of COM frequency information for pretuning
24 - Inadequate VOR-ADF system/transmitter & reciever/ poor, inaccurate signals
25 - Changing NAV frequencies at halfway point

26 - Difficult transition between high and low altitude enroute charts
27 - Understanding ADF
28 - Excessive route changes by ATC
29 - Misunderstanding between pilot and ATC when being cleared to a fix

TABLE B15-A - CONTINUED

30 - Fuel inefficiency of many present routes
31 - Excessive vectoring
32 - Updating charts to present conditions (terrain)
33 - Obtaining weather information while communicating with ATC
34 - Poor panel design
35 - Reliability of equipment/failures

36 - Unable to obtain requested altitude
37 - Cleared to low altitude fix when filed and flying high
38 - Finding continual update on groundspeed & position
39 - Avoiding restricted areas using RNAV
40 - Filing flight plan

41 - Enroute procedures too complex
42 - Changing charts while in flight
43 - ADF indicator in position other than ADF
44 - Obtaining charts
45 - VOR "only" stations

46 - No "approach corridors" on terminal area charts
47 - Holding patterns - no EFC or EAC times given and entry difficult
48 - Position checks - high and low altitude charts
49 - VFR pilots on IFR airways, crowded airways
50 - ADF outdated

51 - Talkingto controllers while wearing oxygen mask
52 - Too many VOR'S
53 - Delayed handoffs from enroute to approach controller
54 - Charts too expensive
55 - More use of HSI

56 - Handoffs over NAVAIDS where pilot workload is highest
57 - Loss of radio
58 - Clearances too complex
59 - Excessive frequency changes during an approach
60 - Loss of center frequency

TABLE B15-A - CONCLUDED

61 - Utilizing SIDS & STARS, publish more information
62 - Unfamiliar with new equipment interpretation & operation
63 - Heading control
64 - Discrete helicopter RNAV routes/approaches not published
65 - ATC enroute let downs to below 10,000 causing speed reduction

66 - TCA'S too large & high
67 - Not enough NDB'S
68 - MOA'S not on high altitude charts
69 - Non-radar approaches at uncontrolled airport
70 - Precipitation static & other noise transmitted over NAV signals

71 - Finding/estimating ETA
72 - Approach/departure procedures
73 - Not knowing active runway & approach to prepare
74 - Not enough airways
75 - RNAV reliance on VOR

TABLE B15-B - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 15, SOLUTION

15. Navigation (e.g., enroute charts, enroute procedures, radar vectors, ADF, VOR, RNAV, DME, displays/indicators).
C2C32-33 Problem
C2C34-35 Solution

PROBLEM* C2C32-33	SOLUTION† C2C34-35	FREQ
0	0	957
0	99	2
0	3	1
0	8	1
0	38	1
1	35	5
1	99	2
2	6	11
2	34	10
2	0	9
2	8	7
2	37	7
2	99	7
2	50	3
2	46	2
2	3	1
2	7	1
2	10	1
2	21	1
2	22	1
2	57	1
3	1	3
4	0	2
4	2	2
4	12	1
5	3	19
5	0	3
5	99	2
5	7	1
6	2	29
6	16	7
6	0	3
6	99	3
6	3	1
6	4	1
7	4	26
7	11	2
7	0	1

PROBLEM* C2C32-33	SOLUTION† C2C34-35	FREQ
7	32	1
8	5	2
8	99	2
8	2	1
8	35	1
9	7	1
9	59	1
10	8	1
10	30	1
11	38	5
11	98	2
11	0	1
11	2	1
11	6	1
11	22	1
11	26	1
11	37	1
11	52	1
11	63	1
13	2	12
13	41	5
13	0	4
13	99	2
14	0	1
14	10	1
14	99	1
15	11	5
15	0	2
15	99	1
16	99	3
16	10	1
16	35	1
16	50	1
17	2	6
17	12	1
17	16	1
18	4	1
19	13	5

*Refer to problem code explanations on pages 77-79
†Refer to solution code explanations on pages 83-85

TABLE B15-B - CONTINUED

PROBLEM* C2C32-33	SOLUTION† C2C34-35	FREQ
19	24	1
19	98	1
19	99	1
20	2	32
20	16	10
20	0	6
20	99	4
20	4	3
20	63	3
20	19	2
20	13	1
20	14	1
20	15	1
20	20	1
21	4	1
21	17	1
21	32	1
22	18	1
23	2	1
23	4	1
23	20	1
24	24	15
24	0	5
24	47	4
24	4	3
24	48	2
24	49	1
24	99	1
25	23	1
27	26	3
27	64	3
27	99	3
27	0	2
27	4	2
27	49	1
28	57	10
28	99	4
28	10	2
28	63	2
28	0	1
28	8	1
28	50	1
29	28	1
30	3	3
30	0	1

PROBLEM* C2C32-33	SOLUTION† C2C34-35	FREQ
31	0	1
32	29	2
33	31	3
33	36	1
34	4	6
34	32	4
34	17	1
35	4	10
35	99	3
35	11	2
35	26	1
35	38	1
36	33	1
37	0	1
38	38	1
39	0	1
40	39	1
41	56	2
41	40	1
41	99	1
42	2	2
42	41	1
42	99	1
43	42	2
44	2	1
44	11	1
47	0	1
47	26	1
47	60	1
47	99	1
48	25	1
49	45	1
49	99	1
50	49	2
51	51	1
52	53	1
53	55	1
54	0	1
54	4	1
54	11	1
55	11	1
56	58	1
57	61	1
58	3	1
59	62	2

*Refer to problem code explanations on pages 77-79
†Refer to solution code explanations on pages 83-85

TABLE B15-B - CONTINUED

PROBLEM* C2C32-33	SOLUTION† C2C34-35	FREQ
60	20	1
61	99	1
62	26	2
63	65	1
64	99	1
68	69	1
69	56	1
69	99	1
70	71	1
71	38	1
74	72	1
75	4	1
98	0	62
98	98	38
98	99	2
98	2	1
98	3	1
98	56	1
99	99	44
99	0	11
99	2	3
99	26	2
99	16	1
99	33	1
99	38	1
99	64	1
99	66	1

*Refer to problem code explanations on pages 77-79
†Refer to solution code explanations on pages 83-85

TABLE B15-B - CONTINUED

15. Navigation (e.g., enroute charts, enroute procedures, radar vectors, ADF, VOR, RNAV, DME, display/indicators) Solutions

00 - No answer
98 - None
99 - Unusable reply

01 - CDI should fail to skewed position, ADF failure position
02 - Redesign charts
03 - Establish RNAV/direct routes
04 - Redesign (including standardization)
05 - Use autopilot

06 - Require ATC to state point at which radar vectoring terminates
07 - More use of RNAV
08 - More ATC awareness of single pilot workload limitations
09 - Add another NAV receiver
10 - Request ATC assistance/cooperation

11 - Reduce cost
12 - Add terrain features to IFR charts
13 - Longer intervals between changes
14 - Add more radial lines to RNAV charts
15 - Victor airway correspondence flip side of chart

16 - Use color graphics
17 - Use heads up display
18 - Install altitude reminder
19 - Same scale on all enroute charts
20 - Publish all COM frequencies

21 - Procedure change regarding acceptance of radar vectors
22 - ATC position reports
23 - DME designed with distance reminder for VOR changeover
24 - Upgrade maintenance of ground facilities by FAA
25 - Combine high & low altitude enroute charts into one structured chart

26 - Instruction improvement
27 - Better utilization of existing equipment
28 - Require ATC to give exact name of all fixes & distance
29 - Better means of updating charts
30 - Plan approach areas for earlier descents

TABLE B15-B - CONTINUED

31 - Be able to obtain weather from ATC
32 - Redesign panel - combine instruments - alleviate scan
33 - Radar vector along airways
34 - Inform pilot of nature & extent of radar vector for more efficient vectoring
35 - More radar vectors, more radar facilities & radar service

36 - Use onboard radar
37 - Establish minimum vectoring altitudes (publish in AIM)
38 - Use DME
39 - Tower to tower IFR clearances
40 - Simplification of system

41 - Chart display unit in cockpit
42 - ADF position switch light
43 - Change more VOR stations to VORTACS
44 - Show all position checks needed on both low and high altitude charts
45 - Use encoding transponder

46 - Use of arrival and departure "corridors" in TCA
47 - Stronger transmitters/receivers
48 - Add more VORS to system, collocate with airports
49 - Eliminate ADF
50 - ATC more willing to coordinate with one another (departure/approach control)

51 - Design oxygen mask equipped with microphone
52 - Design position indicator by combining 2 VORS, digital coordinates
53 - Use more standard routes
54 - Adapt more r/w procedures
55 - Controllers issue holding instructions while awaiting further clearances
56 - Clarify and simplify procedures
57 - Advanced notice by ATC of changes
58 - Enact handoffs between NAVAIDS
59 - Bypass routes established and published for congested areas
60 - Graphically depict holding pattern and entries on charts

TABLE B15-B - CONCLUDED

61 - One altitude rule for loss of radio COM - fly MEA
62 - One frequency from start of approach to touchdown
63 - Rename intersection to be intelligible & easily located
64 - Use RMI
65 - Warning system for 15° deviation from heading "bug"

66 - Require transponder & encoder to fly IFR
67 - Keep fast aircraft above 10,000 feet as long as possible
68 - Build more NDB's
69 - Show MOA's on high altitude charts
70 - Speed restrictions for overtaking slower aircraft

71 - More attention to shielding and antenna location
72 - Establish more airways

TABLE B16-A - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 16, PROBLEM

16. Operations and Procedures (e.g., aircraft systems, ATC, regulations, inflight data management).
C2C36-37 Problem

C2C36-37*	FREQ	PERCENT
0	1017	62.817
99	141	8.709
3	107	6.609
98	81	5.003
21	21	1.297
1	15	0.926
9	14	0.865
14	14	0.865
22	14	0.865
27	13	0.803
47	13	0.803
8	12	0.741
18	11	0.679
12	9	0.556
19	7	0.432
10	6	0.371
11	6	0.371
42	6	0.371
45	6	0.371
2	5	0.309
5	5	0.309
6	5	0.309
7	5	0.309
13	5	0.309
20	5	0.309
58	5	0.309
26	4	0.247
29	4	0.247
16	3	0.185
17	3	0.185
28	3	0.185
30	3	0.185

C2C36-37*	FREQ	PERCENT
39	3	0.185
50	3	0.185
4	2	0.124
15	2	0.124
23	2	0.124
25	2	0.124
31	2	0.124
34	2	0.124
40	2	0.124
44	2	0.124
46	2	0.124
48	2	0.124
49	2	0.124
52	2	0.124
54	2	0.124
59	2	0.124
60	2	0.124
24	1	0.062
32	1	0.062
33	1	0.062
35	1	0.062
36	1	0.062
37	1	0.062
38	1	0.062
43	1	0.062
51	1	0.062
53	1	0.062
55	1	0.062
56	1	0.062
57	1	0.062
62	1	0.062
64	1	0.062

*Refer to code explanations on pages 87-89

TABLE B16-A - CONTINUED

16. Operations and Procedures (e.g., aircraft systems, ATC, regulations, inflight data management) Problems

00 - No answer
98 - None
99 - Unusable reply

01 - Nonstandard location of controls
02 - Local ATC procedures
03 - FAR's/ATC procedures too complex/excessive
04 - Currency of information from ATC
05 - Frequent rerouting

06 - Insensitivity by ATC to general aviation transceiver quality
07 - Interfacility coordination
08 - ATC operational demands
09 - ATC talks too much and too fast
10 - Availability of information inflight

11 - Aircraft operating manuals inadequate
12 - Copying clearances
13 - Improper training of ATC personnel
14 - Excessive radar vectoring
15 - Windshield icing

16 - ATC insensitivity to cost effective traffic management
17 - Excessive altitude changes
18 - ATC has too much authority
19 - Preferential ATC handling of airline airplanes
20 - ATC attitude toward general aviation

21 - Data management (charts, etc.)
22 - Lack of aircraft emergency systems
23 - Certain preferred routes require S.E. aircraft to fly long legs over open water
24 - Poor autopilot
25 - Pilots' lack of understanding of ATC

26 - Delays in arrivals and departures at large airports
27 - ATC does not leave time for comfortable descent
28 - Difficulty in collecting necessary preflight information
29 - Hard to read flight instrument

TABLE B16-A - CONTINUED

30 - Difficulty in obtaining weather inflight
31 - Excessive clearance delays
32 - ATC not knowing the FAR's
33 - Poor preflight planning
34 - The high cost of aircraft systems
35 - Routes used are not shown on charts

36 - Too much ATC control over VFR aircraft
37 - The use of a landing checklist
38 - Stage III service not efficient
39 - Heating systems are sometimes limited in capability
40 - ATC not aware of aircraft onboard equipment

41 - Aircraft position lights are not effective
42 - ATC changes in routing given to pilots without enough notice
43 - Frequency storage and handling capability
44 - Pilots and controllers are afraid to report near misses
45 - Too many frequency and transponder changes

46 - Too much emphasis put on cockpit aids (computers, fancy plotters, complex kneeboards, etc.)
47 - Unreliability of certain systems
48 - Airports are overcrowded and too complex
49 - Aircraft systems too complex
50 - Not always in radar contact

51 - Excessive controller workload
52 - The system is too complex for the single pilot
53 - Reporting points too close for an airplane without a transponder
54 - Close encounters with military aircraft near an Air Force base
55 - Inadequate anti-ice/de-ice systems

56 - ATC not pointing out traffic
57 - Hard to keep up with rule changes
58 - Fuel systems (guages, etc.)
59 - Loss of communications because of being too far from a station
60 - ATC in general

TABLE B16-A - CONCLUDED

61 - Midair collision potential
62 - ATC forgets about flight
63 - Controllers forget SPIFR has a workload
64 - Unreliable flight instruments

TABLE B16-B - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 16, SOLUTION

16. Operations and Procedures (e.g., aircraft systems, ATC, regulations, inflight data management).
C2C36-37 Problem
C2C38-39 Solution

PROBLEM* C2C36-37	SOLUTION† C2C38-39	FREQ
0	0	1011
0	99	4
0	6	2
1	1	12
1	0	2
1	17	1
2	14	2
2	2	1
2	3	1
2	10	1
3	3	81
3	99	12
3	0	9
3	98	2
3	2	1
3	5	1
3	20	1
4	99	2
5	99	3
5	0	1
5	5	1
6	8	3
6	4	1
6	98	1
7	0	1
7	3	1
7	4	1
7	5	1
7	99	1
8	99	4
8	14	3
8	3	2
8	37	2
8	2	1
9	7	6
9	99	4
9	4	2
9	14	2

PROBLEM* C2C36-37	SOLUTION† C2C38-39	FREQ
10	99	3
10	8	2
10	5	1
11	9	4
11	99	2
12	19	4
12	99	3
12	7	1
12	14	1
13	14	1
13	15	1
13	20	1
13	44	1
13	99	1
14	99	6
14	0	2
14	10	2
14	21	2
14	30	1
14	37	1
15	11	2
16	0	1
16	12	1
16	24	1
17	15	1
17	16	1
17	99	1
18	12	5
18	99	2
18	3	1
18	13	1
18	14	1
18	20	1
19	0	2
19	6	2
19	13	2
19	99	1
20	99	4

*Refer to problem code explanations on pages 87-89
†Refer to solution code explanations on pages 92-93

TABLE B16-B - CONTINUED

PROBLEM* C2C36-37	SOLUTION† C2C38-39	FREQ
20	0	1
21	19	6
21	99	6
21	8	3
21	0	2
21	46	2
21	17	1
21	32	1
22	17	9
22	99	3
22	0	1
22	2	1
23	0	1
23	18	1
24	8	1
25	20	2
26	24	2
26	37	1
26	99	1
27	99	6
27	0	2
27	29	2
27	5	1
27	14	1
27	98	1
28	0	1
28	43	1
28	99	1
29	0	1
29	1	1
29	8	1
29	99	1
30	0	2
30	99	1
31	0	2
32	99	1
33	23	1
34	99	2
35	21	1
36	99	1
37	8	1
38	2	1
39	25	2
39	0	1

PROBLEM* C2C36-37	SOLUTION† C2C38-39	FREQ
40	26	1
40	99	1
42	28	4
42	0	1
42	99	1
43	32	1
44	33	1
44	99	1
45	99	3
45	0	1
45	10	1
45	32	1
46	34	1
46	98	1
47	17	4
47	35	3
47	99	3
47	8	2
47	89	1
48	99	2
49	99	2
50	36	3
51	37	1
52	38	2
53	99	1
54	0	1
54	2	1
55	40	1
56	0	1
57	41	1
58	99	2
58	1	1
58	8	1
58	47	1
59	42	2
60	45	1
60	99	1
62	37	1
64	49	1
98	0	75
98	98	5
98	99	1
99	99	116
99	0	25

*Refer to problem code explanations on pages 87-89
†Refer to solution code explanations on pages 92-93

TABLE B16-B - CONTINUED

16. Operations and Procedures (e.g., aircraft systems, ATC, regulations, inflight data management) Solutions

00 - No answer
98 - None
99 - Unusable reply

01 - Redesign (including standardization)
02 - Eliminate
03 - Simplify regulations/procedures
04 - Simplify ATC communications
05 - Better coordination

06 - Sequencing based on speed
07 - Talk slower
08 - Used advanced technology
09 - Explanation of performance figure determination
10 - Permit more direct routing through terminal areas

11 - Require windshield deicer
12 - Permit pilot to exercise his authority
13 - Sequencing based upon first come first served
14 - More ATC awareness of single pilot workload limitations
15 - Require the higher performance airplane to make altitude changes

16 - Require altitude encoder for all aircraft
17 - Require emergency systems
18 - ATC should not route S.E. aircraft on long legs over open water
19 - Better cockpit design for managing paperwork
20 - More pilot - controller forums

21 - Publication of preferred routes through congested areas
22 - All VORs should have recorded weather
23 - More and better preflight planning
24 - Have ATC give pilots information on how long clearance delays will be
25 - Improve heating systems

26 - Type of aircraft onboard equipment should be carried through the system
27 - Need to improve aircraft position lights
28 - Notify pilots sooner of changes in routing

TABLE B16-B - CONCLUDED

29 - Better controller training
30 - ATC cooperation with general aviation aircraft
31 - More simplified clearances
32 - Memory storing NAV/coms
33 - Do not place penalties on controllers and pilots who report near misses
34 - Put more emphasis on flying the airplane first
35 - Establish higher standards for NAV/COM equipment

36 - Need more ATC radar sites
37 - More controllers and better controller equipment
38 - Need to simplify the system for single pilot IFR
39 - Single frequency approaches
40 - Require anti-ice/de-ice systems on all IFR aircraft

41 - Send every pilot a semi-annual bulletin on FAR changes
42 - Establish more remote NAV/COM facilities
43 - Provide a place on the flight plan to show what type of weather briefing the pilot has had
44 - Better controller training (Same as No. 29)
45 - A new system

46 - Use a copilot
47 - Automatic mixture control
48 - Need a better collision avoidance system
49 - Drive the DG off a slave gyro

TABLE B17-A - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 17, PROBLEM

17. Training and Proficiency (e.g., adequacy, standardization, desk top and aircraft simulators).
C2C40-41 Problem

C2C40-41*	FREQ	PERCENT
0	874	53.984
8	99	6.115
25	72	4.447
98	67	4.138
3	66	4.077
7	51	3.150
10	51	3.150
12	49	3.027
18	49	3.027
99	45	2.779
5	44	2.718
21	20	1.235
1	14	0.865
19	12	0.741
14	10	0.618
28	10	0.618
13	9	0.556
11	5	0.309
16	5	0.309
29	5	0.309
35	5	0.309
2	4	0.247

C2C40-41*	FREQ	PERCENT
9	4	0.247
27	4	0.247
31	4	0.247
4	3	0.185
15	3	0.185
20	3	0.185
22	3	0.185
24	3	0.185
30	3	0.185
32	3	0.185
34	3	0.185
38	3	0.185
6	2	0.124
26	2	0.124
33	2	0.124
37	2	0.124
40	2	0.124
17	1	0.062
23	1	0.062
39	1	0.062
41	1	0.062

*Refer to code explanations on pages 95-96

TABLE B17-A - CONTINUED

17. Training and Proficiency (e.g., adequacy, standardization, desk top and aircraft simulators) Problems

00 - No answer
98 - None
99 - Unusable Reply

01 - Inadequate training in navigation and communications
02 - Nonstandard BFR's
03 - Insufficient training in IMC and weather hazards
04 - Inadequate training in radio communications failure
05 - Simulators lack realism (especially desk top type)

06 - Maintaining NDB procedures proficiency
07 - Lack of standardized training
08 - Maintaining recency of experience (including cost)
09 - Inadequate training in ATC procedures
10 - Ineffective use of/lack of simulators

11 - Lack of experience with varied approaches
12 - Inadequate training quality
13 - Expense of simulator
14 - Inadequate IFR proficiency check
15 - Reluctance to use instrument rating in IMC

16 - Lax check pilots
17 - Inadequate facilities for briefing and debriefing
18 - Inadequate training
19 - ATC intimidation of IFR training flights
20 - Excessive total flight time requirements for instrument rating

21 - Inadequate emergency situation training
22 - Lack of spin and roll training
23 - Lack of ATC control in high density airports
24 - Lack of cross country time in ATC system during instrument rating training
25 - Inadequate proficiency

26 - Too much radar assistance
27 - Six hours of instrument proficiency in six months is inadequate

TABLE B17-A - CONCLUDED

28 - Expense of using aircraft for training due to fuel costs
29 - Overcrowded NAV facilities for practice
30 - Need better ground instructors
31 - Non acceptance of simulator training by FAA
32 - Nonstandardization of flight examiners
33 - FAA standards for flight check are not clear
34 - FAA instrument books are outdated
35 - Keeping up with changes in FARS and procedures

36 - Transition from IMC to runway environment
37 - Simulators should correspond to actual aircraft types
38 - Lack of ILS approaches at low density airports
39 - Underpaid CFII'S
40 - Simulators do not qualify for proficiency checks

41 - Instructor - student communications difficult

TABLE B17-B - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 17, SOLUTION

17. Training and Proficiency (e.g., adequacy, standardization, desk top and aircraft simulators).
C2C40-41 Problem
C2C42-43 Solution

PROBLEM* C2C40-41	SOLUTION† C2C42-43	FREQ
0	0	865
0	7	5
0	11	3
0	99	1
1	1	4
1	6	2
1	7	2
1	17	2
1	0	1
1	34	1
1	52	1
1	99	1
2	2	3
2	0	1
3	3	47
3	1	6
3	17	3
3	27	3
3	33	2
3	12	1
3	24	1
3	37	1
3	39	1
3	99	1
4	1	3
5	33	10
5	22	6
5	3	5
5	45	5
5	4	4
5	48	3
5	0	2
5	17	2
5	98	2
5	99	2
5	5	1
5	6	1
5	41	1
6	1	1
6	5	1
7	6	35
7	99	5
7	0	3
7	3	2
7	41	2
7	1	1
7	7	1
7	12	1
7	98	1
8	7	36
8	99	11
8	5	10
8	0	9
8	4	5
8	10	4
8	33	3
8	46	3
8	1	2
8	11	2
8	3	1
8	8	1
8	13	1
8	20	1
8	21	1
8	25	1
8	29	1
8	30	1
8	34	1
8	35	1
8	38	1
8	47	1
8	49	1
8	51	1
9	1	2
9	9	2
10	7	20

*Refer to problem code explanations on pages 95-96
†Refer to solution code explanations on pages 100-101

TABLE B17-B - CONTINUED

PROBLEM* C2C40-41	SOLUTION† C2C42-43	FREQ
10	10	8
10	46	6
10	0	4
10	4	3
10	33	3
10	17	2
10	8	1
10	11	1
10	40	1
10	47	1
10	99	1
11	18	2
11	0	1
11	1	1
11	7	1
12	27	12
12	17	8
12	99	5
12	0	4
12	7	4
12	39	4
12	6	3
12	11	2
12	1	1
12	5	1
12	12	1
12	14	1
12	20	1
12	41	1
12	98	1
13	10	3
13	0	2
13	4	1
13	7	1
13	8	1
13	33	1
14	0	2
14	11	2
14	14	2
14	12	1
14	18	1
14	19	1
14	26	1
15	3	2

PROBLEM* C2C40-41	SOLUTION† C2C42-43	FREQ
15	13	1
16	14	3
16	18	1
16	99	1
17	15	1
18	1	9
18	0	6
18	17	6
18	7	5
18	32	5
18	43	3
18	39	2
18	98	2
18	3	1
18	5	1
18	6	1
18	10	1
18	11	1
18	12	1
18	13	1
18	18	1
18	19	1
18	36	1
18	37	1
19	7	3
19	28	3
19	0	1
19	9	1
19	21	1
19	30	1
19	33	1
19	49	1
20	16	3
21	1	9
21	33	6
21	7	2
21	0	1
21	17	1
21	30	1
22	1	2
22	17	1
23	23	1
24	24	3
25	30	20

*Refer to problem code explanations on pages 95-96
†Refer to solution code explanations on pages 100-101

TABLE B17-B - CONTINUED

PROBLEM* C2C40-41	SOLUTION† C2C42-43	FREQ
25	11	14
25	5	7
25	7	7
25	1	6
25	2	3
25	14	3
25	26	3
25	41	3
25	18	1
25	29	1
25	32	1
25	34	1
25	42	1
25	99	1
26	28	1
26	31	1
27	30	2
27	1	1
27	11	1
28	7	5
28	0	2
28	35	1
28	51	1
28	98	1
29	21	3
29	50	1
29	55	1
30	1	1
30	17	1
30	99	1
31	35	2
31	0	1
31	46	1
32	14	1
32	19	1
32	99	1
33	6	1
33	19	1
34	44	2
34	0	1
35	43	2
35	0	1
35	41	1
35	44	1
37	6	1
37	33	1
38	50	2
38	99	1
39	39	1
40	19	1
40	22	1
41	33	1
98	0	60
98	98	7
99	99	29
99	0	13
99	32	1
99	37	1
99	98	1

*Refer to problem code explanations on pages 95-96
†Refer to solution code explanations on pages 100-101

TABLE B17-B - CONTINUED

17. Training and Proficiency (e.g., adequacy, standardization, desk top and aircraft simulators) Solutions

00 - No answer
98 - None
99 - Unusable Reply

01 - More training
02 - Standardize BFR guidelines
03 - Spend more time training in IMC
04 - Design low cost motion simulator
05 - Continued proficiency practice

06 - Standardize training
07 - More use of simulators
08 - Make it less costly
09 - Make ATC Procedures Manual available
10 - FAA provide low cost simulator time

11 - Periodic instrument checkride
12 - Emphasize flight instructor responsibility
13 - Two level instrument rating certification
14 - Tighten check pilot performance
15 - Pilot conference rooms at FSS

16 - Eliminate flight time requirements for certification/or reduce
17 - Emphasize teaching techniques
18 - Higher checkride standards
19 - Standardize criteria for checkride performance
20 - Pilot organizations publicize pilot get together where pilots ride as safety pilots for one another

21 - Practice facilities, more facilities
22 - Use "hood time" instead of simulator time
23 - More radar control by ATC
24 - More cross country time in IFR system required
25 - Allow fewer than 6 approaches under actual or simulated conditions and permit VFR approaches using IFR procedures

26 - Require periodic instrument dual
27 - Higher actual instrument experience for CFII'S
28 - Allow practice approaches to perform complete procedure
29 - Provide "updater" courses/refresher training
30 - Higher requirement to remain proficient (more than 6 hrs. in 6 mos.)

TABLE B17-B - CONCLUDED

31 - Request to resume "own navigation"
32 - Higher requirements in flight time to obtain IFR rating
33 - More sophisticated simulators
34 - Higher actual IMC time requirements for staying current
35 - A low simulator time to qualify in meeting proficiency requirements

36 - Require FAA to give all instrument flight checks
37 - Pilots should familiarize themselves through self study
38 - Relax safety pilot requirement
39 - Improve CFII pay and working conditions
40 - Provide simulators and tapes for purpose of proficiency

41 - Better enforcement by FAA
42 - Biennial should require proficiency in each aircraft class
43 - Mandatory ground school
44 - Update IFR flying manuals/handbooks
45 - Do away with desk top simulators

46 - More availability of simulators (location)
47 - Develop simulator packages for video games and/or home computers
48 - Lower time credits for desktop simulators
49 - ATC allow more practice approaches from VFR flights
50 - More ILS facilities

51 - More flexibility in meeting recency of experience
52 - More dual instruction in high density traffic area operations
53 - Simplify training/more basics
54 - Use realistic training methods simulating problems
55 - Establish off airport facilities, with ATC participation, for practice approaches

TABLE B18-A - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 18, PROBLEM

18. Airplane Stability and Control (e.g., hands off stability, use of autopilots, stall/spin, limitations of conventional control wheel).
C2C44-45 Problem

C2C44-45*	FREQ	PERCENT
0	1133	69.981
4	153	9.450
98	125	7.721
2	68	4.200
99	59	3.644
8	17	1.050
3	11	0.679
10	10	0.618
13	9	0.556
1	6	0.371
7	5	0.309
12	5	0.309

C2C44-45*	FREQ	PERCENT
15	4	0.247
9	2	0.124
16	2	0.124
19	2	0.124
5	1	0.062
6	1	0.062
11	1	0.062
14	1	0.062
17	1	0.062
18	1	0.062
20	1	0.062
21	1	0.062

*Refer to code explanations on page 103

TABLE B18-A - CONCLUDED

18. Aircraft Stability and Control (e.g., hands off stability, use of autopilots, stall/spin, limitations of conventional control wheel) Problems

00 - No answer
98 - None
99 - Unusable Reply

01 - No problem
02 - Autopilot
03 - Control wheel
04 - Poor stability
05 - Insufficient emphasis on use of trim tab

06 - Insufficient storage space for flight equipment
07 - Runaway trim
08 - Workload
09 - Climb/descent control
10 - Trim

11 - Single pilot operations
12 - Controls different from one aircraft to another
13 - Stall/spin handling
14 - Cable controls become sloppy with time
15 - Cost of flight systems

16 - Roll tendency due to uneven fuel burn
17 - Poor training of students in the use of autopilots
18 - 100% reliance on autopilots
19 - The speed at which the gear or flaps can be put down is too slow
20 - Not enough information in flight manuals on stability

21 - Lateral instability due to unbalanced lateral loads

TABLE B18-B - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 18, SOLUTION

18. Airplane Stability and Control (e.g., hands off stability, use of autopilots, stall/spin, limitations of conventional control wheel).
C2C44-45 Problem
C2C46-47 Solution

PROBLEM* C2C44-45	SOLUTION† C2C46-47	FREQ
0	0	1112
0	6	11
0	1	5
0	9	2
0	99	2
0	16	1
1	0	4
1	7	1
1	99	1
2	4	10
2	6	10
2	99	9
2	21	8
2	8	6
2	1	5
2	0	4
2	7	4
2	15	4
2	17	3
2	13	2
2	12	1
2	22	1
2	98	1
3	16	4
3	7	2
3	0	1
3	2	1
3	3	1
3	6	1
3	99	1
4	6	37
4	1	32
4	7	19
4	99	18
4	0	13
4	12	10
4	5	5
4	17	5
4	4	4
4	98	4
4	21	3
4	15	1
4	18	1
4	19	1
5	5	1
6	7	1
7	6	1
7	7	1
7	10	1
7	12	1
7	26	1
8	6	11
8	21	2
8	99	2
8	0	1
8	7	1
9	1	1
9	10	1
10	7	3
10	12	3
10	99	3
10	6	1
11	6	1
12	14	3
12	17	1
12	99	1
13	0	3
13	5	2
13	7	2
13	23	1
13	99	1
14	20	1
15	0	2
15	21	2
16	6	2
17	99	1

*Refer to problem code explanations on page 103
†Refer to solution code explanations on page 106

TABLE B18-B - CONTINUED

PROBLEM* C2C44-45	SOLUTION† C2C46-47	FREQ
18	4	1
19	7	1
19	99	1
20	22	1
21	12	1
98	0	114
98	98	4
98	99	4
98	6	3
99	99	39
99	0	15
99	1	2
99	6	2
99	10	1

*Refer to problem code explanations on page 103
†Refer to solution code explanations on page 106

TABLE B18-B - CONCLUDED

18. Aircraft Stability and Control (e.g., hands off stability, use of autopilots, stall/spin, limitations of conventional control wheel) Solutions

00 - No Answer
98 - None
99 - Unusable Reply

01 - Require wing levelers
02 - Limit travel
03 - Incorporate non-slip surface to prevent loss of control
04 - More emphasis on hand flying
05 - More training

06 - Use autopilot
07 - Better design
08 - Periodic autopilot check
09 - Incorporate spoilers
10 - Disconnect

11 - Use IVSI
12 - Require 3 axis trim
13 - Require two pilots
14 - Standardize control locations
15 - Backup/warning systems

16 - Control stick instead of control wheel
17 - Stricter stability and control certification requirements
18 - Rudder trim
19 - Flight director
20 - Do away with cable controls and use push rod or hydraulic systems

21 - A cheaper, more efficient autopilot
22 - Require manufacturersto publish more information on aircraft limitations
23 - Require stall/spin training for private pilots

TABLE B19-A - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 19, PROBLEM

19. Weather Information (e.g., availability, reliability, content, presentation).
C2C48-49 Problem

C2C48-49*	FREQ	PERCENT
0	699	43.175
5	199	12.292
98	85	5.250
9	79	4.880
3	75	4.632
6	73	4.509
20	62	3.830
8	60	3.706
7	43	2.656
4	28	1.729
18	25	1.544
2	21	1.297
22	21	1.297
10	19	1.174
99	16	0.988
17	15	0.926
14	10	0.618
11	9	0.556
12	8	0.494
19	8	0.494
31	8	0.494
23	7	0.432

C2C48-49*	FREQ	PERCENT
37	6	0.371
21	5	0.309
26	4	0.247
1	3	0.185
13	3	0.185
15	3	0.185
24	3	0.185
33	3	0.185
35	3	0.185
28	2	0.124
30	2	0.124
39	2	0.124
16	1	0.062
25	1	0.062
27	1	0.062
29	1	0.062
32	1	0.062
34	1	0.062
36	1	0.062
38	1	0.062
40	1	0.062
90	1	0.062

*Refer to code explanations on pages 108-109

TABLE B19-A - CONTINUED

19. Weather Information (e.g., availability, reliability, content, presentation) Problems

00 - No Answer
98 - None
99 - Unusuable Reply

01 - TWEB
02 - Lack of weather assistance from ARTCC/Approach Control
03 - Avialabilty and reliability of FSS weather information
04 - Incomplete FSS weather briefings
05 - Reliability of FSS weather information

06 - Availability/timeliness of weather information
07 - Presentation of weather information too complicated
08 - Inconsistent quality of weather briefings
09 - FSS briefer attempts to influence pilot's "GO-NO GO" decision
10 - Insufficient PIREPs

11 - Cloud base/top information
12 - ATIS
13 - NWS briefers reluctant to give pilot briefings
14 - Poorly trained FSS personnel
15 - EFAS needs more frequencies

16 - Some stations not in system (e.g., Canadian)
17 - Enroute weather below standard
18 - Difficult to get EFAS at times
19 - Winds aloft at 18,000 not always available and reliable
20 - Long delays in reaching FSS during poor weather

21 - Need more reporting stations
22 - Not enough ground based weather radar assistance for thunderstorm avoidance
23 - Obtaining weather enroute requires frequent frequency changes and leaving ARTCC frequency
24 - Having to make a long distance call to FSS
25 - Getting radar vectored into a thunderstorm

26 - PBS aviation weather too early/too infrequent/ not available on weekends
27 - Lack of information on embedded thunderstorms

TABLE B19-A - CONCLUDED

28 - Briefers talk too fast
29 - Ceiling observations AGL forecasts MSL
30 - PATWAS information too old
31 - Lack of pilot knowledge
32 - PATWAS content inadequate
33 - FSS computer breakdowns
34 - Difficulty in getting ATIS due to workload
35 - Telephone weather briefings lack sufficient detail

36 - Weather information applicable to instrument approach
37 - Can't get old weather out of computer to determine trend
38 - What facilities are available where
39 - Lack of weather information at small, uncontrolled airports
40 - Can't get weather information during tape replacement

TABLE B19-B - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 19, SOLUTION

19. Weather Information (e.g., availability, reliability, content, presentation).
C2C48-49 Problem
C2C50-51 Solution

PROBLEM* C2C48-49	SOLUTION† C2C50-51	FREQ
0	0	697
0	1	1
0	16	1
1	6	2
1	0	1
2	18	6
2	2	4
2	31	4
2	0	2
2	15	2
2	5	1
2	11	1
2	33	1
3	10	6
3	0	5
3	20	5
3	28	5
3	34	5
3	99	5
3	7	4
3	8	4
3	11	4
3	27	4
3	31	3
3	6	2
3	9	2
3	15	2
3	17	2
3	18	2
3	30	2
3	38	2
3	46	2
3	1	1
3	3	1
3	14	1
3	16	1
3	23	1
3	35	1
3	43	1
3	68	1
3	98	1
4	21	5
4	8	4
4	9	3
4	15	3
4	30	3
4	99	3
4	4	2
4	0	1
4	7	1
4	10	1
4	27	1
4	38	1
5	0	45
5	99	26
5	15	24
5	6	17
5	8	16
5	16	14
5	36	14
5	98	6
5	14	5
5	9	4
5	3	3
5	10	3
5	33	3
5	7	2
5	18	2
5	21	2
5	26	2
5	27	2
5	31	2
5	48	2
5	12	1
5	13	1
5	25	1

*†Refer to problem code explanations on pages 108-109
†Refer to solution code explanations on pages 114-115

TABLE B19-B - CONTINUED

PROBLEM* C2C48-49	SOLUTION† C2C50-51	FREQ
5	28	1
5	34	1
6	6	23
6	15	9
6	7	7
6	10	5
6	18	5
6	14	4
6	99	4
6	0	3
6	27	3
6	35	3
6	2	1
6	16	1
6	21	1
6	25	1
6	31	1
6	34	1
6	36	1
7	12	15
7	8	4
7	11	4
7	16	3
7	10	2
7	21	2
7	25	2
7	30	2
7	46	2
7	99	2
7	0	1
7	3	1
7	6	1
7	33	1
7	38	1
8	16	12
8	21	10
8	8	9
8	0	6
8	15	4
8	30	3
8	9	2
8	10	2
8	99	2

PROBLEM* C2C48-49	SOLUTION† C2C50-51	FREQ
8	1	1
8	5	1
8	11	1
8	12	1
8	13	1
8	34	1
8	38	1
8	42	1
8	47	1
8	98	1
9	8	23
9	0	16
9	16	9
9	15	6
9	21	4
9	99	4
9	4	2
9	9	2
9	13	2
9	30	2
9	5	1
9	6	1
9	7	1
9	11	1
9	24	1
9	28	1
9	33	1
9	48	1
9	98	1
10	15	17
10	0	1
10	2	1
11	15	7
11	0	2
12	19	4
12	23	1
12	43	1
12	44	1
12	99	1
13	4	1
13	16	1
13	99	1
14	16	6

*Refer to problem code explanations on pages 108-109
†Refer to solution code explanations on pages 114-115

TABLE B19-B - CONTINUED

PROBLEM* C2C48-49	SOLUTION† C2C50-51	FREQ
14	0	1
14	8	1
14	9	1
14	17	1
15	40	2
15	18	1
16	10	1
17	0	4
17	23	2
17	26	2
17	6	1
17	8	1
17	15	1
17	16	1
17	18	1
17	39	1
17	40	1
18	0	7
18	40	4
18	34	3
18	15	2
18	31	2
18	99	2
18	17	1
18	22	1
18	29	1
18	44	1
18	45	1
19	15	5
19	0	1
19	6	1
19	10	1
20	17	34
20	0	7
20	10	5
20	15	3
20	28	2
20	38	2
20	99	2
20	20	1
20	21	1
20	24	1
20	32	1

PROBLEM* C2C48-49	SOLUTION† C2C50-51	FREQ
20	37	1
20	39	1
20	41	1
21	34	3
21	0	1
21	15	1
22	18	16
22	2	1
22	6	1
22	15	1
22	34	1
22	50	1
23	2	2
23	23	2
23	31	2
23	0	1
24	28	3
25	18	1
26	10	4
27	18	1
28	0	1
28	30	1
29	12	1
30	6	2
31	33	8
32	8	1
33	0	1
33	7	1
33	17	1
34	0	1
35	46	1
35	49	1
35	99	1
36	7	1
37	7	3
37	99	2
37	6	1
38	99	1
39	34	1
39	48	1
40	99	1
90	0	1
98	0	78

*†Refer to problem code explanations on pages 108-109
†Refer to solution code explanations on pages 114-115

TABLE B19-B - CONTINUED

PROBLEM* C2C48-49	SOLUTION† C2C50-51	FREQ
98	98	2
98	99	2
98	20	1
98	30	1
98	33	1

PROBLEM* C2C48-49	SOLUTION† C2C50-51	FREQ
99	99	7
99	0	5
99	33	2
99	5	1
99	27	1

*Refer to problem code explanations on pages 108-109
†Refer to solution code explanations on pages 114-115

TABLE B19-B - CONTINUED

19. Weather Information (e.g., availability, reliability, content, presentation) Solutions

00 - No answer
98 - None
99 - Unusable Reply

01 - Replace route forecasts with area forecasts
02 - Staff with qualified personnel in ARTCC
03 - Let local FSS prepare own forecasts
04 - More detailed telephone weather briefings
05 - Provide legal immunity to controllers/briefers

06 - More frequent update
07 - Automation
08 - Better interpretation of weather information by briefer for pilots
09 - Use all available weather information
10 - Offer aviation weather on commercial broadcast station/cable TV

11 - Simplify with visual displays
12 - Simplify to make easier to read/understand
13 - Call again
14 - Check weather enroute
15 - More emphasis on PIREPs

16 - More training for FSS briefers
17 - More briefers during peak hours and poor weather
18 - Weather radar availability at ARTCC's
19 - Slow message rate
20 - More PATWAS availability

21 - Establish standard format for briefer to report to pilot
22 - Establish global weather center, computerized with instantaneous weather observations
23 - More availability of VOR TWEB
24 - Better FSS management
25 - More use of satellite and microwave radar information

26 - Improved communications between facilities re: current and forecast weather
27 - Stop closing and relocating FSS's

TABLE B19-B - CONCLUDED

28 - 800 phone number for aviation weather
29 - Give priority to inflight request for weather information from FSS
30 - Ask for additional information from briefer
31 - More weather advisories from ARTCC'S
32 - Simultaneous briefings (telephone calls)
33 - Train pilots to understand limitations of forecasts
34 - Need more FSS remote capability in mountains and remote areas
35 - Improve long range forecasting

36 - More accurate forecasts
37 - Different telephone numbers for flight plan filing and weather briefings
38 - Install weather self briefing terminals at FBO's and remote airports
39 - Better TWEB's, put frequency on charts
40 - More EFAS frequencies

41 - Place telephone PATWAS/ATIS on hold during busy periods with long delays
42 - Different categories of weather briefings (e.g., air carrier, VFR general aviation)
43 - More ATIS
44 - Digital inflight printout on airborne CRT
45 - High and low attitude EFAS frequencies

46 - TV weather repeaters at airports
47 - Personal visit to FSS
48 - Call destination FSS
49 - Replace machines with briefers
50 - Plot thunderstorm information by VOR radial and distance

TABLE B20-A - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 20, PROBLEM

20. Weather Encounters (e.g., precipitation, icing, thunderstorms, hail, low ceiling, low visibility, turbulence, wind shear).
C2C52-53 Problem

C2C52-53*	FREQ	PERCENT
0	916	56.578
7	106	6.547
8	95	5.868
15	68	4.200
5	55	3.397
98	50	3.088
14	40	2.471
10	36	2.224
99	28	1.729
4	27	1.668
2	26	1.606
9	24	1.482
1	20	1.235
12	19	1.174
21	18	1.112
3	17	1.050
11	13	0.803

C2C52-53*	FREQ	PERCENT
19	12	0.741
18	10	0.618
16	9	0.556
17	8	0.494
13	5	0.309
22	4	0.247
6	2	0.124
27	2	0.124
20	1	0.062
23	1	0.062
24	1	0.062
25	1	0.062
26	1	0.062
28	1	0.062
29	1	0.062
30	1	0.062
40	1	0.062

*Refer to code explanations on page 117

TABLE B20-A - CONCLUDED

20. Weather Encounters (e.g., precipitation, icing, thunderstorms, hail, low ceiling, low visibility, turbulence, wind shear) Problems

00 - No Answer
98 - None
99 - Unusable Reply

01 - Lack of ATC assistance in weather
02 - Weather encounters
03 - Unavailability of weather radar to ATC
04 - Availability/timeliness of weather information
05 - All are problems

06 - Icing and cloud tops
07 - Icing
08 - Thunderstorms
09 - Turbulence
10 - Icing and thunderstorms

11 - Low ceilings
12 - Insufficient PIREPs
13 - FSS briefer attempts to influence pilot's "GO-NO GO" decision
14 - Windshear
15 - Reliability of weather information

16 - Lack of airborne weather radar
17 - Conflicting weather information from ATC and FSS
18 - Low visibility
19 - Poor ARTCC/pilot interaction
20 - Heavy precipitation

21 - Weather exceeds aircraft/pilot capabilities
22 - Severe weather not stressed/forewarned when known
23 - Lack of rain removal
24 - Sudden deterioration of weather near surface
25 - Static discharge/St. Elmo's fire

26 - Different briefers give different emphasis on weather
27 - Hail
28 - Transition IFR/VFR/IFR
29 - Frontal activity
30 - Pilot lack of familiarity with local weather patterns

TABLE B20-B - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 20, SOLUTION

20. Weather Encounters (e.g., precipitation, icing, thunderstorms, hail, low ceiling, low visibility, turbulence, wind shear).
C2C52-53 Problem
C2C54-55 Solution

PROBLEM* C2C52-53	SOLUTION† C2C54-55	FREQ
0	0	912
0	16	1
0	17	1
0	33	1
0	99	1
1	5	4
1	10	4
1	1	2
1	2	2
1	6	2
1	8	2
1	7	1
1	15	1
1	16	1
1	24	1
2	1	8
2	4	3
2	6	2
2	10	2
2	12	2
2	17	2
2	2	1
2	20	1
2	21	1
2	23	1
2	24	1
2	34	1
2	98	1
3	2	10
3	7	3
3	16	2
3	0	1
3	8	1
4	6	5
4	1	3
4	10	3
4	0	2
4	3	2
4	21	2
4	24	2
4	31	2
4	2	1
4	13	1
4	16	1
4	17	1
4	20	1
4	99	1
5	12	14
5	4	12
5	17	8
5	99	4
5	0	3
5	1	3
5	21	3
5	6	2
5	28	2
5	3	1
5	8	1
5	10	1
5	98	1
6	1	2
7	22	23
7	1	16
7	12	11
7	0	9
7	17	9
7	21	9
7	11	8
7	99	4
7	4	3
7	5	2
7	6	2
7	24	2
7	98	2
7	2	1
7	7	1

*Refer to problem code explanations on page 117
†Refer to solution code explanations on pages 121-122

TABLE B20-B - CONTINUED

PROBLEM* C2C52-53	SOLUTION† C2C54-55	FREQ
7	8	1
7	9	1
7	23	1
7	30	1
8	2	19
8	8	13
8	16	13
8	0	7
8	6	5
8	7	5
8	12	5
8	99	5
8	1	3
8	4	2
8	5	2
8	9	2
8	10	2
8	17	2
8	20	2
8	21	2
8	3	1
8	11	1
8	13	1
8	23	1
8	26	1
8	33	1
9	11	5
9	14	5
9	12	4
9	0	2
9	2	1
9	4	1
9	6	1
9	9	1
9	17	1
9	20	1
9	21	1
9	26	1
10	12	8
10	1	4
10	2	4
10	0	3
10	7	3
10	8	3

PROBLEM* C2C52-53	SOLUTION† C2C54-55	FREQ
10	22	3
10	99	3
10	16	2
10	21	2
10	20	1
11	21	3
11	0	1
11	1	1
11	7	1
11	12	1
11	17	1
11	26	1
11	28	1
11	32	1
11	98	1
11	99	1
12	1	17
12	3	1
12	14	1
13	1	1
13	5	1
13	12	1
13	17	1
13	26	1
14	18	21
14	0	7
14	1	4
14	19	3
14	17	2
14	6	1
14	26	1
14	99	1
15	21	19
15	1	12
15	0	9
15	6	8
15	20	3
15	2	2
15	7	2
15	16	2
15	31	2
15	5	1
15	10	1
15	12	1

*Refer to problem code explanations on page 117
†Refer to solution code explanations on pages 121-122

TABLE B20-B - CONTINUED

PROBLEM* C2C52-53	SOLUTION† C2C54-55	FREQ
15	13	1
15	15	1
15	23	1
15	24	1
15	25	1
15	99	1
16	16	5
16	2	1
16	7	1
16	8	1
16	20	1
17	20	6
17	6	1
17	21	1
18	0	2
18	11	1
18	12	1
18	20	1
18	21	1
18	24	1
18	27	1
18	30	1
18	98	1
19	0	3
19	1	2
19	6	2
19	5	1
19	8	1
19	10	1

PROBLEM* C2C52-53	SOLUTION† C2C54-55	FREQ
19	13	1
19	20	1
20	10	1
21	4	8
21	17	5
21	22	2
21	12	1
21	16	1
21	21	1
22	0	1
22	21	1
22	23	1
22	99	1
23	29	1
24	6	1
25	9	1
26	26	1
27	17	1
27	98	1
28	17	1
29	30	1
30	17	1
40	10	1
98	0	48
98	98	1
98	99	1
99	99	19
99	0	8
99	7	1

*Refer to problem code explanations on page 117
†Refer to solution code explanations on pages 121-122

TABLE B20-B - CONTINUED

20. Weather Encounters (e.g., precipitation, icing, thunderstorms, hail, low ceiling, low visibility, turbulence, wind shear) Solutions

00 - No Answer
98 - None
99 - Unusable Reply

01 - More emphasis on PIREPs
02 - More ground based weather radar
03 - PIREPs added to transcribed weather
04 - Knowledge of equipment/personal limitations
05 - Courteous and helpful attitude from ATC

06 - More frequent/more timely update
07 - Develop radar sensitive to weather phoenomena
08 - ATC radar avoidance vector
09 - Concentrate on flying airplane
10 - ATC sensitivity to SPIFR problems

11 - Request altitude/route change
12 - Use caution/avoid/treat with respect
13 - More radar coverage
14 - More accurate turbulence PIREPs
15 - Provide legal immunity to controllers/briefers

16 - Airborne weather radar
17 - Pilot training
18 - Develop better/more accurate windshear detection equipment
19 - Greater pilot attentiveness on approaches
20 - Coordination of current weather information between ATC/FSS/NWS

21 - Update forecasting methods/personnel
22 - Anticing/deicing equipment
23 - ATC emphasis on dangerous/severe weather
24 - Pilot ask for updated weather enroute
25 - Fly early or late to avoid thermal turbulence

26 - ATC training
27 - Have all airports equipped with ALS
28 - Eliminate SPIFR
29 - Windshield wipers

TABLE B20-B - CONCLUDED

30 - Land or don't fly
31 - More weather reporting stations
32 - Divert to alternate
33 - Do a 180 degree turn
34 - Good preflight briefing

TABLE B21-A - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 21, PROBLEM

21. Communications (e.g., excessive communication/frequency changes, misunderstandings, radio noise/static, audio quality, information content).
C2C56-57 Problem

C2C56-57*	FREQ	PERCENT
0	742	45.831
1	126	7.783
9	116	7.165
99	97	5.991
12	78	4.818
5	70	4.324
98	61	3.768
11	58	3.582
13	34	2.100
17	23	1.421
23	21	1.297
26	18	1.112
3	14	0.865
21	14	0.865
28	14	0.865
8	13	0.803
10	12	0.741
2	10	0.618
31	10	0.618
27	9	0.556

C2C56-57*	FREQ	PERCENT
16	8	0.494
24	8	0.494
33	8	0.494
4	7	0.432
7	6	0.371
22	6	0.371
25	5	0.309
29	5	0.309
32	5	0.309
36	5	0.309
19	3	0.185
6	2	0.124
18	2	0.124
30	2	0.124
37	2	0.124
14	1	0.062
15	1	0.062
20	1	0.062
34	1	0.062
78	1	0.062

*Refer to code explanations on pages 124-125

TABLE B21-A - CONTINUED

21. Communications (e.g., excessive communication/frequency changes, misunderstandings, radio noise/static, audio quality, information content) Problems

00 - No Answer
98 - None
99 - Unusable Reply

01 - Too many communcations frequency changes
02 - Too many transponder code changes
03 - Communications accuracy during high workload
04 - All are problems
05 - Excessive communications

06 - Clearnace delivery congestion
07 - Frequency overlap
08 - Inadequate pilot training in communications
09 - Poor audio quality of airborne receivers/transmitters
10 - UNICOM congestion

11 - Controllers/FSS briefers talk too fast
12 - Misunderstanding clearnaces
13 - Noise
14 - Accurate reading of frequency selector display
15 - ATC responsiveness to requests

16 - ARTCC frequency congestion
17 - Frequency congestion
18 - Pilot reluctance to use the system
19 - Clearance changes after takeoff
20 - ATC use of communications frequencies to educate pilots

21 - Background noise in ATC facilities
22 - ATC coordination on handoffs
23 - Nonstandard phraseology
24 - Loss of radio communications
25 - Controllers with foreign accents

26 - Poor attitude of ATC
27 - ATC intimidation of pilots
28 - ATC transmitter quality
29 - Critical information crowded into single transmission

TABLE B21-A - CONCLUDED

30 - Lack of communication during slow periods
31 - No COMM or radar coverage in certain areas
32 - Heavy controller workload
33 - ATIS too long and hard to understand
34 - Next assigned frequency too far apart
35 - Unpublished frequencies

36 - Controllers not acknowledging transmissions
37 - Women harder to understand

TABLE B21-B - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 3, QUESTION 21, SOLUTION

21. Communications (e.g., excessive communication/frequency changes, misunderstandings, radio noise/static, audio quality, information content).
C2C56-57 Problem
C2C58-59 Solution

PROBLEM* C2C56-57	SOLUTION† C2C58-59	FREQ
0	0	720
0	1	4
0	5	3
0	26	3
0	24	2
0	99	2
0	2	1
0	6	1
0	8	1
0	9	1
0	17	1
0	18	1
0	28	1
0	30	1
1	9	60
1	0	22
1	99	15
1	98	8
1	2	3
1	5	3
1	28	3
1	12	2
1	17	2
1	20	2
1	1	1
1	6	1
1	7	1
1	8	1
1	11	1
1	38	1
2	23	4
2	0	2
2	16	1
2	18	1
2	98	1
2	99	1
3	0	2
3	1	2
3	2	2
3	99	2
3	9	1
3	12	1
3	20	1
3	22	1
3	27	1
3	41	1
4	98	2
4	0	1
4	2	1
4	5	1
4	7	1
4	8	1
5	13	19
5	2	10
5	0	8
5	99	6
5	6	5
5	9	4
5	7	3
5	19	3
5	28	3
5	98	3
5	29	2
5	10	1
5	17	1
5	31	1
5	35	1
6	3	1
6	6	1
7	6	4
7	0	1
7	4	1
8	13	6
8	0	3
8	99	3
8	18	1

*Refer to problem code explanations on pages 124-125
†Refer to solution code explanations on pages 129-130

TABLE B21-B - CONTINUED

PROBLEM* C2C56-57	SOLUTION† C2C58-59	FREQ
9	5	59
9	0	19
9	1	14
9	99	8
9	98	4
9	7	3
9	26	3
9	11	2
9	10	1
9	13	1
9	16	1
9	29	1
10	6	10
10	9	1
10	99	1
11	7	32
11	0	7
11	99	5
11	1	3
11	17	2
11	2	1
11	6	1
11	9	1
11	11	1
11	13	1
11	21	1
11	31	1
11	41	1
11	98	1
12	7	22
12	99	10
12	11	8
12	24	7
12	13	5
12	18	5
12	8	4
12	0	3
12	31	3
12	1	2
12	17	2
12	28	2
12	2	1
12	5	1
12	6	1

PROBLEM* C2C56-57	SOLUTION† C2C58-59	FREQ
12	26	1
12	35	1
13	5	8
13	1	7
13	10	4
13	99	3
13	0	2
13	7	2
13	27	2
13	28	2
13	2	1
13	8	1
13	11	1
13	16	1
14	0	1
15	11	1
16	6	5
16	0	1
16	13	1
16	99	1
17	6	12
17	13	3
17	99	3
17	0	2
17	19	1
17	29	1
17	31	1
18	13	2
19	0	1
19	14	1
19	19	1
20	15	1
21	16	6
21	0	2
21	1	2
21	99	2
21	11	1
21	26	1
22	36	2
22	11	1
22	31	1
22	98	1
22	99	1
23	18	12

*Refer to problem code explanations on pages 124-125
†Refer to solution code explanations on pages 129-130

TABLE B21-B - CONTINUED

PROBLEM* C2C56-57	SOLUTION† C2C58-59	FREQ
23	13	2
23	25	2
23	99	2
23	2	1
23	31	1
23	43	1
24	34	2
24	5	1
24	9	1
24	11	1
24	20	1
24	32	1
24	40	1
25	21	3
25	7	1
25	99	1
26	99	4
26	0	3
26	17	3
26	12	2
26	31	2
26	98	2
26	6	1
26	44	1
27	99	4
27	17	3
27	0	1
27	31	1
28	26	5
28	0	3
28	98	2
28	99	2
28	7	1
28	12	1
29	0	2
29	7	1
29	11	1
29	17	1
30	0	2
31	33	9
31	22	1
32	6	2
32	98	2
32	99	1
33	37	4
33	6	1
33	7	1
33	26	1
33	98	1
34	38	1
36	0	1
36	6	1
36	24	1
36	39	1
36	45	1
37	26	1
37	42	1
78	76	1
98	0	53
98	98	6
98	99	2
99	99	61
99	0	16
99	5	4
99	1	3
99	17	3
99	6	2
99	7	2
99	11	1
99	12	1
99	18	1
99	26	1
99	38	1
99	98	1

*Refer to problem code explanations on pages 124-125
†Refer to solution code explanations on pages 129-130

TABLE B21-B - CONTINUED

21. Communications (e.g., excessive communication/frequency changes, misunderstandings, radio noise/static, audio quality, information content) Solutions

00 - No Answer
98 - None
99 - Unusable Reply

01 - Use boom microphone/with headset
02 - Simplify communications
03 - More clearance delivery frequencies
04 - Greater frequency separation
05 - Better equipment

06 - More frequencies/controllers
07 - Talk more slowly/distinctly
08 - Stay alert
09 - Fewer frequency changes
10 - Quiet cabin interior

11 - Keep trying
12 - Controllers should be required to have flight training
13 - Pilot training
14 - Request vectors
15 - Leave for telephone

16 - Noise cancelling microphones for ATC
17 - ATC sensitivity to SPIFR problems
18 - Standard phraseology
19 - Minimize communications
20 - Provide frequencies in advance

21 - Require proper pronounciation
22 - Controllers advise pilots of low weather
23 - Fewer transponder changes
24 - ATC awareness of readback
25 - Increase requirements for FCC license

26 - Improve audio quality of ground based transmitters
27 - Soundproofing for aircraft
28 - Develop new clearance delivery systems (e.g. cockpit CRT)
29 - Discrete frequencies
30 - Communications check by ATC during slow, quiet periods

TABLE B21-B - CONCLUDED

31 - More ATC training
32 - Deicing transmitter antennas
33 - Remote facilities
34 - Internal test circuits in radio
35 - Write down clearances

36 - Improve ATC interfacility communications on handoff
37 - Shorten ATIS
38 - Make next assigned frequency closer
39 - Publish sector frequencies
40 - Standby radios

41 - Destination approach information available enroute
42 - Fewer women controllers
43 - Random monitoring of pilots and ATC
44 - More women controllers
45 - Require ATC to acknowledge transmissions

TABLE B22 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 4, QUESTION 22

SECTION 4: Difficulty of IFR Single Pilot Flight

22. As a "normal IFR flight becomes more difficult because of work load, which aspect of your flying performance is most likely to deteriorate? (check one)

C2CC60
1. remembering ATC instructions
2. accurate interpretation of instruments
3. heading control
4. use of enroute charts, approach charts, and manuals
5. ATC communications and clearance interpretation
6. maintaining positional awareness
7. altitude control
8. no problems
9. other (please specify)

C2CC61-62 To what do you attribute this deterioration?

PROBLEM

C2CC60	FREQ	PERCENT
0	43	2.656
1	237	14.639
2	52	3.212
3	228	14.083
4	239	14.762

PROBLEM (con.)

C2CC60	FREQ	PERCENT
5	273	16.862
6	254	15.689
7	48	2.965
8	209	12.909
9	36	2.224

REASON*

C2C61-62	FREQ	PERCENT
0	521	32.1804
3	335	20.6918
5	105	6.4855
7	62	3.8295
12	52	3.2119
8	46	2.8413
99	44	2.7177
1	41	2.5324
14	39	2.4089
10	36	2.2236
6	33	2.0383
22	33	2.0383
23	29	1.7912
11	27	1.6677
16	22	1.3589

REASON* (con.)

C2C61-62	FREQ	PERCENT
25	22	1.3589
9	21	1.2971
2	17	1.0500
30	16	0.9883
18	15	0.9265
26	14	0.8647
28	11	0.6794
35	10	0.6177
32	9	0.5559
4	7	0.4324
21	7	0.4324
13	6	0.3706
31	6	0.3706
29	5	0.3088
33	5	0.3088

*Refer to code explanations on pages 133-134

TABLE B22 - CONCLUDED

REASON*

C2C61-62	FREQ	PERCENT
24	4	0.2471
27	4	0.2471
98	3	0.1853
15	2	0.1235
17	2	0.1235

REASON* (con.)

C2C61-62	FREQ	PERCENT
19	2	0.1235
20	2	0.1235
34	2	0.1235
36	2	0.1235

*Refer to code explanations on pages 133-134

TABLE B22 - CONTINUED

22. To what do you attribute this deterioration?

00 - No Answer
98 - None
99 - Unusable Reply

01 - ATC talks too fast
02 - Misunderstanding ATC
03 - Get too busy with other tasks/divided attention/not enough time
04 - Reading charts
05 - Too busy flying the airplane

06 - Lack of experience
07 - Lack of proficiency (currency)
08 - Fatigue
09 - Tension/anxiety
10 - Improper scan

11 - Inaccessability of charts/cumbersome
12 - Radar vectors
13 - Inadequate training
14 - Too many ATC clearance changes/requests
15 - Aircraft cabin noise level

16 - Not planning ahead
17 - Off airways operation
18 - Poor memory
19 - Age
20 - Too many frequency changes

21 - Audio quality
22 - Too much attention to communications/preoccupation with ATC
23 - Charts not well organized
24 - ATC information not received early enough (e.g., approach information)
25 - Lack of autopilot/inadequate equipment

26 - Frequency congestion
27 - Weather worse than forecast
28 - Aircraft equipment problem
29 - Controller too busy/overload
30 - Clearances too long and involved

TABLE B22 - CONTINUED

31 - Unfamiliar area
32 - Can't write and fly at the same time
33 - ATC attitude
34 - Too many inexperienced pilots flying
35 - Not paying attention

36 - Being handled like a two pilot operation

TABLE B23 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 4, QUESTION 23

23. During an instrument approach in actual IFR conditions how frequently have you encountered the IFR condition indicated, and how difficult is the condition for you to handle?

IFR condition	Frequency of encounter*	Difficulty†
Normal (does not include any of the conditions which follow)	C2CC63	C2CC64
Minimum ceiling and/or visibility	C2CC65	C2CC66
Light or moderate icing	C2CC67	C2CC68
Light or moderate turbulence	C2CC69	C2CC70
Scattered or broken thunderstorms	C2CC71	C2CC72
Strong winds	C2CC73	C2CC74
Nonroutine ATC instructions	C2CC75	C2CC76

Question format can be seen in appendix A, page 14.
*Coding: 0 - no answer, 1 - never, 2 - seldom, 3 - often, 4 - almost always.
†Coding: 0 - if frequency is never, 1 - little, 2 - some, 3 - much, 4 - extreme.

FREQUENCY/NORMAL

C2CC63	FREQ	PERCENT
0	591	36.504
1	35	2.162
2	135	8.338
3	631	38.975
4	227	14.021

FREQUENCY/MINIMUMS

C2CC65	FREQ	PERCENT
0	99	6.115
1	74	4.571
2	1061	65.534
3	370	22.854
4	15	0.926

DIFFICULTY/NORMAL

C2CC64	FREQ	PERCENT
0	726	44.842
1	797	49.228
2	88	5.435
3	8	0.494
4	0	0.000

DIFFICULTY/MINIMUMS

C2CC66	FREQ	PERCENT
0	250	15.442
1	711	43.916
2	583	36.010
3	73	4.509
4	2	0.124

TABLE B23 - CONCLUDED

FREQUENCY/ICING

C2CC67	FREQ	PERCENT
0	108	6.671
1	322	19.889
2	1022	63.125
3	166	10.253
4	1	0.062

DIFFICULTY/ICING

C2CC68	FREQ	PERCENT
0	422	26.065
1	515	31.810
2	503	31.069
3	153	9.450
4	26	1.606

FREQUENCY/TURBULENCE

C2CC69	FREQ	PERCENT
0	91	5.621
1	22	1.359
2	747	46.140
3	739	45.645
4	20	1.235

DIFFICULTY/TURBULENCE

C2CC70	FREQ	PERCENT
0	196	12.106
1	667	41.198
2	664	41.013
3	85	5.250
4	7	0.432

FREQUENCY/TH-STORMS

C2CC71	FREQ	PERCENT
0	109	6.733
1	186	11.489
2	887	54.787
3	427	26.374
4	10	0.618

DIFFICULTY/TH-STORMS

C2CC72	FREQ	PERCENT
0	334	20.630
1	405	25.015
2	621	38.357
3	229	14.145
4	30	1.853

FREQUENCY/WINDS

C2CC73	FREQ	PERCENT
	1*	
0	112	6.922
1	48	2.967
2	865	53.461
3	574	35.476
4	19	1.174

DIFFICULTY/WINDS

C2CC74	FREQ	PERCENT
	1*	
0	243	15.019
1	559	34.549
2	688	42.522
3	122	7.540
4	6	0.371

FREQUENCY/ATC

C2CC75	FREQ	PERCENT
	1*	
0	127	7.849
1	117	7.231
2	1053	65.080
3	292	18.047
4	29	1.792

DIFFICULTY/ATC

C2CC76	FREQ	PERCENT
	1*	
0	282	17.429
1	628	38.813
2	547	33.807
3	145	8.962
4	16	0.989

*Keypunch error.

TABLE B24 - IFT SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 5, QUESTION 24

SECTION 5: Typical IFR Single Pilot Flight Characteristics

24. Where do you originate most of your IFR flights?
C3C6-8 airport name _____
C3C9-10 city _____ state _____

C3C6-8*	FREQ
AAP	2
ABI	2
ABQ	6
ABR	1
ABY	1
ACJ	1
ACY	2
ADS	6
AGC	5
AHN	1
AID	1
AKR	1
ALB	1
ALN	1
ALO	1
ALW	2
AMW	1
ANB	1
APA	9
ARB	2
ARR	3
ART	1
ASH	5
ASW	2
ATL	2
ATW	1
AUS	3
AVL	1
AVP	2
AZO	5
BAK	2
BBP	2
BDL	1
BDR	3
BEC	3
BED	6
BFF	1
BFI	10
BFL	2

C3C6-8*	FREQ
BHB	1
BHM	3
BIL	3
BJC	5
BKL	1
BLI	3
BLM	1
BMG	1
BNA	5
BNO	1
BNW	2
BOI	3
BOS	2
BPT	1
BRL	3
BTA	1
BTR	1
BTV	2
BUF	7
BUR	7
BVO	2
BVU	1
BVY	1
BWI	5
BZN	1
B09	1
B20	1
CAK	2
CCR	5
CDC	1
CDH	1
CDN	1
CDW	3
CEA	2
CEZ	1
CGF	3
CGS	1
CHA	2
CHO	1

C3C6-8*	FREQ
CHS	2
CIC	1
CID	2
CJE	1
CKV	2
CLE	1
CLG	1
CLL	2
CLS	1
CLT	4
CMA	1
CMH	5
CMI	2
CNO	1
CNW	1
COI	1
COQ	1
COS	3
COU	2
CPS	3
CRE	1
CRG	3
CRP	1
CRQ	1
CRW	1
CSG	1
CTJ	1
CUB	1
CVE	1
CVN	1
CVO	1
CXO	1
CXY	2
CYS	1
CZL	1
C06	1
C16	1
C20	1
C24	1

*Location identifiers: DOT/FAA Order 7350.4

TABLE B24 - CONTINUED

C3C6-8*	FREQ
C34	1
C43	1
C59	1
C73	2
C82	1
DAB	6
DAL	10
DAN	1
DAY	2
DBQ	1
DCA	4
DCU	1
DDC	1
DEC	2
DED	1
DEN	2
DET	4
DFW	2
DGW	1
DHN	1
DHT	1
DLN	1
DNL	1
DNV	1
DPA	6
DSM	4
DTN	5
DTO	2
DTW	1
DVL	1
DVT	1
DWH	5
DXR	3
DYR	1
D31	1
D97	1
D98	3
EAW	1
EDN	1
EGQ	1
ELP	3
EMT	7
ENW	1
ERV	1
ESF	1
ETB	1
EUG	4
EVV	2

C3C6-8*	FREQ
EWK	2
EYW	1
E02	1
E11	1
E15	1
FAR	1
FAT	6
FAY	3
FBL	2
FCM	9
FDK	2
FFT	1
FGX	1
FKN	1
FLL	3
FLO	1
FMY	2
FNL	1
FNT	2
FOD	1
FOE	1
FOK	1
FPR	1
FRG	16
FST	1
FTW	7
FTY	10
FUL	6
FWA	1
FXE	5
F39	1
F54	3
F67	2
F70	1
F72	1
GAI	4
GBR	2
GEG	4
GEY	1
GFK	2
GJT	2
GMU	2
GNV	1
GPT	1
GRB	1
GRE	1
GRR	5
GSH	1

C3C6-8*	FREQ
GSP	1
GTR	1
GVT	1
GYR	1
GYY	1
G08	1
HBG	1
HFD	7
HHR	1
HIB	1
HIL	1
HIO	8
HKS	2
HLN	1
HOB	1
HOT	1
HOU	12
HPN	8
HRO	1
HSI	1
HSV	2
HUF	1
HUM	1
HVN	1
HWD	5
HWO	5
HYA	1
H37	1
H73	1
IAD	4
IAG	1
IAH	3
ICT	7
IDA	1
IDI	1
IDL	1
ILE	3
ILG	3
ILM	2
ILN	1
IND	2
INT	2
IOW	1
ISM	1
ISP	9
IXD	1
I14	1
I28	2

*Location identifiers: DOT/FAA Order 7350.4

TABLE B24 - CONTINUED

C3C6-8*	FREQ
I34	1
I44	1
I52	2
I66	1
I77	2
I78	1
JAX	1
JBR	2
JEF	1
JMS	1
JXN	1
KCK	1
K24	1
K56	1
K73	1
K84	2
LAF	3
LAL	1
LAN	3
LAR	1
LAS	1
LAX	2
LBB	1
LBL	2
LDJ	1
LEX	3
LFT	3
LGB	13
LGU	1
LHC	1
LHV	1
LHX	1
LIT	3
LNA	1
LNK	3
LNN	3
LNS	2
LOU	4
LOZ	1
LSE	1
LUG	1
LUK	4
LVK	2
LWS	1
L12	2
L47	1
L66	1
MAF	3

C3C6-8*	FREQ
MAI	1
MAO	1
MBO	1
MBS	2
MCE	2
MCI	1
MCN	3
MDH	4
MDT	1
MDW	6
MEI	1
MEM	5
MFD	2
MFE	1
MFR	1
MGY	5
MHT	4
MIA	2
MIC	3
MIE	1
MIV	1
MKC	5
MKE	2
MKG	1
MKL	1
MKT	2
MLB	3
MLE	1
MLI	1
MLU	1
MMU	1
MOB	2
MOD	2
MOT	1
MQB	1
MQI	1
MRB	2
MRC	1
MRY	1
MSN	2
MSO	2
MSP	6
MSY	2
MTV	1
MUT	1
MVL	1
MVN	1
MWC	2

C3C6-8*	FREQ
MWH	2
MYF	8
MZZ	1
M14	2
M17	1
M19	1
M21	1
M40	1
M42	1
NEW	5
N07	1
N24	2
N34	1
N43	1
N46	2
N47	1
N66	1
N67	3
N81	1
N87	2
N92	1
OAJ	1
OAK	10
OAO	1
OA6	1
OA9	1
OCA	1
OCN	1
OEA	1
OFK	1
OGB	1
OGD	2
OJC	3
OKC	4
OLE	1
OLM	2
OMA	1
ONO	2
ONT	1
OOA	1
OPF	9
ORD	3
ORF	7
ORH	2
ORL	8
OSH	1
OSU	3
OTG	1

*Location identifiers: DOT/FAA Order 7350.4

TABLE B24 - CONTINUED

C3C6-8*	FREQ
OTM	1
OUN	2
OWD	1
OXR	3
O6G	1
PAE	6
PAI	1
PAO	2
PBI	3
PCU	1
PDK	13
PDX	2
PGD	3
PHF	1
PHK	1
PHL	2
PHX	4
PIA	1
PIE	2
PIH	1
PIT	2
PKB	1
PNE	3
PNS	1
POC	6
PRC	4
PSC	1
PSN	1
PTK	7
PTV	1
PVD	1
PVG	1
PVU	1
PWA	8
PWK	8
PWT	1
PYM	1
PYX	1
P10	1
P16	1
Q64	1
RAC	1
RAL	2
RAP	1
RBD	2
RDU	4
RD4	1
RFD	4

C3C6-8*	FREQ
RHV	5
RIC	3
RID	1
RNO	3
RNT	3
ROA	1
ROC	7
RSN	1
RST	1
RVS	1
RZZ	1
SAC	7
SAF	1
SAN	2
SAT	8
SAV	1
SBA	4
SBN	1
SBP	1
SBS	1
SBY	1
SCH	3
SCK	3
SDL	3
SDM	1
SEE	4
SFF	1
SFO	2
SFQ	1
SFZ	2
SGH	2
SGJ	1
SGR	1
SHR	1
SHV	1
SIK	1
SJC	12
SKY	1
SLC	9
SLE	5
SLK	1
SLN	1
SMD	1
SMO	4
SMX	2
SNA	8
SNL	1
SNS	2

C3C6-8*	FREQ
SPA	3
SPG	1
SPI	2
SPW	1
SPX	1
SQL	4
SRU	2
SSF	1
STE	1
STF	1
STL	1
STP	2
STS	3
SUS	4
SUX	2
SVA	1
SWF	1
SYR	1
S07	1
S12	1
S27	1
S36	2
S68	1
S98	1
TAN	3
TCL	1
TDW	2
TEB	14
TIW	2
TIX	1
TLH	2
TMB	3
TOA	12
TOL	1
TOP	2
TO2	1
TPA	2
TPF	1
TRI	3
TRK	1
TRM	1
TTD	1
TTN	2
TUL	4
TUS	2
TVC	1
TVI	1
TWF	1

*Location identifiers: DOT/FAA Order 7350.4

TABLE B24 - CONTINUED

C3C6-8*	FREQ
TYS	7
T27	1
T41	2
T66	1
T86	1
UBS	1
UCY	1
UES	2
UGN	3
UIZ	1
UKI	1
UKT	2
UNV	2
U76	1
VCT	1
VGT	2
VIS	1
VNW	1
VNY	15
VPZ	1
VRB	3
VSF	2
WDG	2
WJF	1
W09	1
WST	1
WVI	2
W10	4
W22	1
W24	1
W28	1
W49	1
W54	1
W66	1
W83	1
W86	2
W93	1
X17	1
X28	1
X31	1
X41	1
X51	1
YIP	2
YKM	2
YNG	3
Y12	1
Y14	1
Y25	1

C3C6-8*	FREQ
Y39	1
0A9	2
0C0	1
0G6	1
0Q9	1
00V	1
000	43
004	1
017	2
02K	2
022	1
056	1
067	1
08A	2
09F	1
1B1	1
1D4	2
1G5	3
1H0	1
1K2	1
1N1	1
1N4	1
1N9	1
1S0	1
1V5	1
1Y9	1
102	1
15G	2
17N	1
2A0	1
2A5	1
2DT	1
2E3	1
2G7	1
2H2	1
2J1	1
2J7	2
2ME	1
2R4	2
2V2	1
2W5	1
203	2
22G	1
26N	1
260	1
29D	1
3BJ	1
3B3	2

C3C6-8*	FREQ
3B7	1
3DA	1
3DM	1
3FM	1
3GV	1
3G6	1
3HA	3
3HE	1
3HW	1
3KM	3
3LC	1
3MY	1
3OA	1
3RC	1
3R0	1
3R3	2
3SQ	2
3WE	1
30F	1
33N	1
352	1
39N	1
4AC	2
4A4	1
4A7	1
4F4	1
4G0	1
417	1
418	1
4S5	1
4U5	1
40N	1
42J	1
47N	1
49J	1
5A1	1
5C8	1
5GH	1
5GR	1
5G7	1
5G9	1
5R5	1
52F	1
6BI	1
6B6	1
6B8	1
6R0	1
6S2	1

*Location identifiers: DOT/FAA Order 7350.4

TABLE B24 - CONTINUED

C3C6-8*	FREQ
7A4	1
7B0	1
7D2	1
7MY	1
797	1
8A0	1
8A7	1

C3C6-8*	FREQ
8BW	1
8G1	1
8G7	1
9A1	1
9G3	1
9G5	1

C3C6-8*	FREQ
9G8	1
93R	1
95F	1
997	32
998	26
999	59

*Location identifiers: DOT/FAA Order 7350.4

Note: In the above, the codes unique to this Table were assigned as follows:

997 - Military only airports within the conterminous U.S.
998 - All airports outside the conterminous U.S.
999 - Unable to identify

TABLE B24 - CONCLUDED

STATE C3C9-10	FREQ	PERCENT
AL	17	1.1
AK	19	1.2
AZ	17	1.1
AR	11	0.7
CA	222	13.7
CO	33	2.0
CT	15	0.9
DE	5	0.3
FL	95	5.9
GA	47	2.9
HI	6	0.4
ID	9	0.6
IL	71	4.4
IN	33	2.0
IA	25	1.5
KS	32	2.0
KY	15	0.9
LA	25	1.5
ME	3	0.2
MD	19	1.2
MA	25	1.5
MI	50	3.1
MN	33	2.0
MS	15	0.9
MO	29	1.8
MT	11	0.7
NE	11	0.7
NV	7	0.4
NH	10	0.6
NJ	37	2.3
NM	15	0.9
NY	68	4.2
NC	29	1.8
ND	6	0.4
OH	62	3.8
OK	29	1.8
OR	31	1.9
PA	44	2.7
RI	4	0.2
SC	19	1.2
SD	3	0.2
TN	38	2.3
TX	128	7.9
UT	14	0.9
VT	6	0.4
VA	37	2.3
WA	50	3.1
WV	4	0.2
WI	19	1.2
WY	5	0.3
DC	9	0.6
No Answer	39	2.4
Foreign	2	0.1
Unusable	11	0.7

NOTE: In addition to the above abbreviations, the following computer codes were also assigned:

00 - No answer
90 - No code
91 - Canada
92 - Mexico
93 - Bahamas
} Foreign
99 - Unusable reply

TABLE B25 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 5, QUESTION 25

25. What instrument approach have you most often made during the last 12 months? (check one)

C3CC11
[1] ILS [4] VOR/DME [7] LDA
[2] LOC [5] ADF [8] SDF
[3] VOR [6] RNAV [9] radar vectors

C3CC12 Is radar assistance available during this approach?
[1] yes [2] no

APPROACH

C3CC11	FREQ	PERCENT
0	45	2.779
1	1115	68.870
2	106	6.547
3	203	12.539
4	64	3.953
5	50	3.088
6	0	0.000
7	3	0.185
8	3	0.185
9	30	1.853

RADAR ASSISTANCE

C3CC12	FREQ	PERCENT
0	209	12.909
1	1151	71.093
2	259	15.998

TABLE B26 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 5, QUESTION 26

26. How frequently do you have someone assist you in the airplane during flight in actual IFR conditions?

C3CC13 [1] never [2] seldom [3] often [4] almost always
C3CC14 Is this person a pilot? [1] yes [2] no
C3CC15 Does he have an instrument rating? [1] yes [2] no
C3CC16 Is he a required copilot? [1] yes [2] no
C3CC17 ☐ required by Federal Aviation Regulation
C3CC18 ☐ required by company policy

ASSISTANT

C3CC13	FREQ	PERCENT
0	27	1.668
1	310	19.148
2	800	49.413
3	334	20.630
4	148	9.141

REQUIRED

C3CC16	FREQ	PERCENT
0	362	22.359
1	114	7.041
2	1143	70.599

PILOT

C3CC14	FREQ	PERCENT
0	340	21.001
1	930	57.443
2	349	21.557

BY FAA

C3CC17	FREQ	PERCENT
0	1550	95.738
1	69	4.262

INSTRUMENT RATING

C3CC15	FREQ	PERCENT
0	358	22.112
1	619	38.233
2	642	39.654

BY COMPANY

C3CC18	FREQ	PERCENT
0	1500	92.650
1	119	7.350

TABLE B27 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 5, QUESTION 27

27. If a copilot is not required, how often would you prefer to have someone assist you in the airplane during flight in actual IFR conditions?

C3CC19 [1] never [2] seldom [3] often [4] almost always

C3CC19	FREQ	PERCENT
0	37	2.285
1	86	5.312
2	513	31.686
3	547	33.786
4	436	26.930

TABLE B28 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 5, QUESTION 28

28. What single factor has caused you most often to cancel an IFR single pilot flight just before planned departure during the last 12 months?

C3CC20
[1] I have not had to cancel a proposed IFR flight
[2] weather worse than published minimums
[3] weather beyond my personal limitations
[4] weather beyond aircraft/equipment capability
[5] equipment malfunction
[6] lack of adequate weather information
[7] lack of adequate flight publications
[8] other (please specify) _____

C3CC20	FREQ	PERCENT
0	48	2.965
1	331	20.445
2	229	14.145
3	528	32.613
4	375	23.162
5	44	2.718
6	24	1.482
7	1	0.062
8	39	2.409

TABLE B29 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 5, QUESTION 29

29. If the following conditions were reported to exist anywhere enroute, what would you do?

	DAY: go	not go	NIGHT: go	not go
light icing	C3CC21 [1]	[2]	C3CC22 [1]	[2]
moderate icing	C3CC23 ☐	☐	C3CC24 ☐	☐
light turbulence	C3CC25 ☐	☐	C3CC26 ☐	☐
moderate turbulence	C3CC27 ☐	☐	C3CC28 ☐	☐
heavy rain	C3CC29 ☐	☐	C3CC30 ☐	☐
scattered thunderstorms	C3CC31 ☐	☐	C3CC32 ☐	☐
broken thunderstorms	C3CC33 ☐	☐	C3CC34 ☐	☐
lines of thunderstorms	C3CC35 ☐	☐	C3CC36 ☐	☐
heavy ground fog	C3CC37 ☐	☐	C3CC38 ☐	☐
weather below minimums	C3CC39 ☐	☐	C3CC40 ☐	☐
IFR over mountains	C3CC41 ☐	☐	C3CC42 ☐	☐
IFR over water	C3CC43 [1]	[2]	C3CC44 [1]	[2]

LT. ICING/DAY

C3CC21	FREQ	PERCENT
0	39	2.409
1	1104	68.190
2	476	29.401

LT. TURBULENCE/DAY

C3CC25	FREQ	PERCENT
0	19	1.174
1	1593	98.394
2	7	0.432

LT. ICING/NIGHT

C3CC22	FREQ	PERCENT
0	50	3.088
1	578	35.701
2	991	61.211

LT. TURBULENCE/NIGHT

C3CC26	FREQ	PERCENT
0	43	2.656
1	1496	92.403
2	80	4.941

M. ICING/DAY

C3CC23	FREQ	PERCENT
0	62	3.830
1	355	21.927
2	1202	74.243

M. TURBULENCE/DAY

C3CC27	FREQ	PERCENT
0	47	2.903
1	1328	82.026
2	244	15.071

M. ICING/NIGHT

C3CC24	FREQ	PERCENT
0	80	4.941
1	183	11.303
2	1356	83.755

M. TURBULENCE/NIGHT

C3CC28	FREQ	PERCENT
0	65	4.015
1	948	58.555
2	606	37.431

TABLE B29 - CONTINUED

RAIN/DAY

C3CC29	FREQ	PERCENT
0	25	1.544
1	1135	70.105
2	459	28.351

RAIN/NIGHT

C3CC30	FREQ	PERCENT
0	48	2.965
1	687	42.434
2	884	54.602

SC. TH-STORMS/DAY

C3CC31	FREQ	PERCENT
0	20	1.235
1	1420	87.708
2	179	11.056

SC. TH-STORMS/NIGHT

C3CC32	FREQ	PERCENT
0	45	2.779
1	809	49.969
2	765	47.251

BK. TH-STORMS/DAY

C3CC33	FREQ	PERCENT
0	34	2.100
1	841	51.946
2	744	45.954

BK. TH-STORMS/NIGHT

C3CC34	FREQ	PERCENT
0	43	2.656
1	340	21.001
2	1236	76.343

LINES TH-STORMS/DAY

C3CC35	FREQ	PERCENT
0	25	1.544
1	172	10.624
2	1422	87.832

LINES TH-STORMS/NIGHT

C3CC36	FREQ	PERCENT
0	41	2.532
1	72	4.447
2	1505	92.959
5*	1	0.062

FOG/DAY

C3CC37	FREQ	PERCENT
0	37	2.285
1	651	40.210
2	931	57.505

FOG/NIGHT

C3CC38	FREQ	PERCENT
0	55	3.397
1	347	21.433
2	1217	75.170

BELOW MIN/DAY

C3CC39	FREQ	PERCENT
0	34	2.100
1	325	20.074
2	1260	77.826

BELOW MIN/NIGHT

C3CC40	FREQ	PERCENT
0	45	2.779
1	169	10.439
2	1405	86.782

*Keypunch error.

TABLE B29 - CONCLUDED

IFR MTS./DAY

C3CC41	FREQ	PERCENT
0	32	1.977
1	1130	69.796
2	457	28.227

IFR WATER/DAY

C3CC43	FREQ	PERCENT
0	52	3.212
1	1228	75.849
2	337	20.815
5*	1	0.062
6*	1	0.062

IFR MTS./NIGHT

C3CC42	FREQ	PERCENT
0	50	3.088
1	736	45.460
2	833	51.452

IFR WATER/NIGHT

C3CC44	FREQ	PERCENT
0	70	4.324
1	885	54.663
2	664	41.013

*Keypunch error.

TABLE B30 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 5, QUESTION 30

30. At the destination airport, what are your personal minimums for making each of the following types of approaches?

	DAY			
	Ceiling (in feet)	Visibility* (in miles)	or	Published minimums
ILS	C3C45-48 _____	C3C49-50 _____		C3CC51
LOC	C3C52-55 _____	C3C56-57 _____		C3CC58
VOR	C3C59-62 _____	C3C63-64 _____		C3CC65
ADF	C3C66-69 _____	C3C70-71 _____		C3CC72
	NIGHT			
	Ceiling (in feet)	Visibility* (in miles)	or	Published minimums
ILS	C4C6-9 _____	C4C10-11 _____		C4CC12
LOC	C4C13-16 _____	C4C17-18 _____		C4CC19
VOR	C4C20-23 _____	C4C24-25 _____		C4CC26
ADF	C4C27-30 _____	C4C31-32 _____		C4CC33

ILS/DAY CEILING

C3C45-48	FREQ	PERCENT
0	1170	72.267
2	1	0.062
50	2	0.124
100	20	1.235
200	102	6.300
250	9	0.556
300	69	4.262
400	83	5.127

ILS/DAY CEILING (con.)

C3C45-48	FREQ	PERCENT
500	99	6.115
600	17	1.050
700	4	0.247
750	1	0.062
800	13	0.803
1000	27	1.668
1200	1	0.062
1500	1	0.062

VISIBILITY*

C3C49-50	FREQ	PERCENT
0:0	1183	73.070
0:1	2	0.124
0:2	18	1.112
0:4	141	8.709
0:6	26	1.606
1:0	169	10.439

VISIBILITY* (con.)

C3C49-50	FREQ	PERCENT
1:4	10	0.618
2:0	50	3.088
3:0	17	1.050
4:0	1	0.062
5:0	2	0.124

*Visibility code: The first column represents a number of statute miles. The second column represents a number of eighths of statute miles (e.g., 0:2 = ¼ statute mile, 1:4 = 1½ statute miles).

TABLE B30 - CONTINUED

MINIMUMS

C3CC51	FREQ	PERCENT
0	414	25.571
1	1205	74.429

LOC/DAY CEILING

C3C52-55	FREQ	PERCENT
0	1274	78.691
1	1	0.062
80	1	0.062
100	9	0.556
200	9	0.556
250	1	0.062
300	26	1.606
350	2	0.124
400	59	3.644
420	1	0.062
500	78	4.818

LOC/DAY CEILING (con.)

C3C52-55	FREQ	PERCENT
600	37	2.285
700	16	0.988
750	3	0.185
800	40	2.471
900	1	0.062
1000	55	3.397
1200	1	0.062
1400	1	0.062
1500	3	0.185
1600	1	0.062

VISIBILITY*

C3C56-57	FREQ	PERCENT
0:0	1277	78.876
0:1	2	0.124
0:2	6	0.371
0:4	33	2.038
0:6	20	1.235
1:0	166	10.253

VISIBILITY* (con.)

C3C56-57	FREQ	PERCENT
1:2	1	0.062
1:4	14	0.865
2:0	68	4.200
3:0	28	1.729
5:0	3	0.185
9:0	1	0.062

MINIMUMS

C3CC58	FREQ	PERCENT
0	342	21.124
1	1277	78.876

*Visibility code: The first column represents a number of statute miles. The second column represents a number of eighths of statute miles (e.g., 0:2 = ¼ statute mile, 1:4 = 1½ statute miles).

TABLE B30 - CONTINUED

VOR/DAY CEILING

C3C59-62	FREQ	PERCENT
0	1277	78.876
100	7	0.432
200	2	0.124
250	1	0.062
300	13	0.803
350	3	0.185
400	33	2.038
450	1	0.062
500	72	4.447
600	42	2.594

VOR/DAY CEILING (con.)

C3C59-62	FREQ	PERCENT
700	11	0.679
750	3	0.185
800	69	4.262
1000	69	4.262
1080	1	0.062
1200	2	0.124
1500	10	0.618
2000	2	0.124
5000	1	0.062

VISIBILITY*

C3C63-64	FREQ	PERCENT
0:0	1279	78.999
0:1	2	0.124
0:2	4	0.247
0:4	17	1.050
0:6	11	0.679
1:0	163	10.068
1:4	15	0.926

VISIBILITY* (con.)

C3C63-64	FREQ	PERCENT
2:0	88	5.435
2:5	1	0.062
3:0	32	1.977
4:0	1	0.062
5:0	4	0.247
6:0	1	0.062
9:0	1	0.062

MINIMUMS

C3CC65	FREQ	PERCENT
0	340	21.001
1	1279	78.999

ADF/DAY CEILING

C3C66-69	FREQ	PERCENT
0	1252	77.332
50	1	0.062
100	4	0.247
150	1	0.062
200	5	0.309
300	2	0.124
350	1	0.062
400	19	1.174
500	55	3.397
600	42	2.594

ADF/DAY CEILING (con.)

C3C66-69	FREQ	PERCENT
700	13	0.803
800	82	5.065
1000	120	7.412
1200	4	0.247
1500	11	0.679
2000	4	0.247
2500	1	0.062
3000	1	0.062
5000	1	0.062

*Visibility code: The first column represents a number of statute miles. The second column represents a number of eighths of statute miles (e.g., 0:2 = ¼ statute mile, 1:4 = 1½ statute miles).

TABLE B30 - CONTINUED

VISIBILITY*

C3C70-71	FREQ	PERCENT
0:0	1252	77.332
0:1	2	0.124
0:2	2	0.124
0:3	1	0.062
0:4	12	0.741
0:6	3	0.185
1:0	151	9.327
1:4	16	0.988

VISIBILITY* (con.)

C3C70-71	FREQ	PERCENT
2:0	116	7.165
2:4	1	0.062
2:5	1	0.062
3:0	51	3.150
4:0	4	0.247
5:0	5	0.309
6:0	1	0.062
9:0	1	0.062

MINIMUMS

C3CC72	FREQ	PERCENT
.	1†	.
0	405	25.031
1	1213	74.969

ILS/NIGHT CEILING

C4C6-9	FREQ	PERCENT
0	1203	74.305
50	3	0.185
100	14	0.865
200	41	2.532
250	5	0.309
300	47	2.903
350	1	0.062
400	62	3.830
500	103	6.362

ILS/NIGHT CEILING (con.)

C4C6-9	FREQ	PERCENT
600	30	1.853
700	6	0.371
750	1	0.062
800	27	1.668
1000	59	3.644
1200	1	0.062
1500	9	0.556
2000	6	0.371
3000	1	0.062

VISIBILITY*

C4C10-11	FREQ	PERCENT
0:0	1215	75.046
0:1	2	0.124
0:2	9	0.556
0:4	70	4.324
0:6	19	1.174
1:0	145	8.956
1:4	17	1.050

VISIBILITY* (con.)

C4C10-11	FREQ	PERCENT
2:0	80	4.941
2:4	1	0.062
3:0	48	2.965
4:0	1	0.062
5:0	10	0.618
6:0	1	0.062
7:0	1	0.062

†Keypunch error.
*Visibility code: The first column represents a number of statute miles. The second column represents a number of eighths of statute miles (e.g., 0:2 = ¼ statute mile, 1:4 = 1½ statute miles).

TABLE B30 - CONTINUED

MINIMUMS

C4CC12	FREQ	PERCENT
0	493	30.451
1	1126	69.549

LOC/NIGHT CEILING

C4C13-16	FREQ	PERCENT
0	1263	78.011
50	1	0.062
100	9	0.556
200	10	0.618
300	19	1.174
350	1	0.062
400	30	1.853
420	1	0.062
500	59	3.644
600	44	2.718

LOC/NIGHT CEILING (con.)

C4C13-16	FREQ	PERCENT
700	12	0.741
750	1	0.062
800	48	2.965
1000	91	5.621
1200	6	0.371
1400	1	0.062
1500	13	0.803
1800	1	0.062
2000	8	0.494
3000	1	0.062

VISIBILITY*

C4C17-18	FREQ	PERCENT
0:0	1269	78.382
0:1	1	0.062
0:2	4	0.247
0:3	1	0.062
0:4	20	1.235
0:6	16	0.988
1:0	113	6.980
1:4	13	0.803
1:5	1	0.062

VISIBILITY* (con.)

C4C17-18	FREQ	PERCENT
2:0	109	6.733
2:4	1	0.062
3:0	56	3.459
4:0	2	0.124
5:0	10	0.618
6:0	1	0.062
7:0	1	0.062
9:0	1	0.062

MINIMUMS

C4CC19	FREQ	PERCENT
0	438	27.054
1	1181	72.946

*Visibility code: The first column represents a number of statute miles. The second column represents a number of eighths of statute miles (e.g., 0:2 = ¼ statute mile, 1:4 = 1½ statute miles).

TABLE B30 - CONTINUED

VOR/NIGHT CEILING

C4C20-23	FREQ	PERCENT
0	1257	77.641
50	1	0.062
100	6	0.371
200	3	0.185
250	1	0.062
300	7	0.432
350	2	0.124
400	22	1.359
450	1	0.062
500	51	3.150
600	44	2.718
700	6	0.371

VOR/NIGHT CEILING (con.)

C4C20-23	FREQ	PERCENT
750	1	0.062
800	60	3.706
900	2	0.124
1000	114	7.041
1080	1	0.062
1200	6	0.371
1500	20	1.235
1800	1	0.062
2000	9	0.556
2500	1	0.062
3000	2	0.124
7000	1	0.062

VISIBILITY*

C4C24-25	FREQ	PERCENT
0:0	1262	77.949
0:1	1	0.062
0:2	3	0.185
0:3	1	0.062
0:4	9	0.556
0:6	10	0.618
1:0	105	6.485
1:4	14	0.865
2:0	124	7.659

VISIBILITY* (con.)

C4C24-25	FREQ	PERCENT
2:4	1	0.062
2:5	1	0.062
3:0	72	4.447
4:0	2	0.124
5:0	11	0.679
7:0	1	0.062
8:0	1	0.062
9:0	1	0.062

MINIMUMS

C4CC26	FREQ	PERCENT
0	445	27.486
1	1174	72.514

*Visibility code: The first column represents a number of statute miles. The second column represents a number of eighths of statute miles (e.g., 0:2 = ¼ statute mile, 1:4 = 1½ statute miles).

TABLE B30 - CONCLUDED

ADF/NIGHT CEILING

C4C27-30	FREQ	PERCENT
0	1245	76.899
50	1	0.062
100	4	0.247
200	6	0.371
300	2	0.124
350	1	0.062
400	10	0.618
500	36	2.224
600	29	1.791
700	10	0.618
800	63	3.891

ADF/NIGHT CEILING (con.)

C4C27-30	FREQ	PERCENT
900	2	0.124
1000	157	9.697
1200	7	0.432
1250	1	0.062
1500	22	1.359
1800	1	0.062
2000	14	0.865
2500	2	0.124
3000	5	0.309
7000	1	0.062

VISIBILITY*

C4C31-32	FREQ	PERCENT
0:0	1245	76.899
0:2	2	0.124
0:3	3	0.185
0:4	5	0.309
0:5	1	0.062
0:6	4	0.247
0:9	1	0.062
1:0	98	6.053
1:2	1	0.062
1:4	13	0.803

VISIBILITY* (con.)

C4C31-32	FREQ	PERCENT
2:0	128	7.906
2:4	1	0.062
2:5	1	0.062
3:0	93	5.744
4:0	6	0.371
5:0	13	0.803
6:0	1	0.062
7:0	1	0.062
8:0	1	0.062
9:0	1	0.062

MINIMUMS

C4CC33	FREQ	PERCENT
0	508	31.377
1	1111	68.623

*Visibility code: The first column represents a number of statute miles. The second column represents a number of eighths of statute miles (e.g., 0:2 = ¼ statute mile, 1:4 = 1½ statute miles).

TABLE B31 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 5, QUESTION 31

31. If the weather were reported to be below minimums at your destination airport, would you fly the approach?

C4CC34 [1] yes [2] no

C4CC34	FREQ	PERCENT
0	57	3.521
1	727	44.904
2	835	51.575

TABLE B32 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 5, QUESTION 32

32. Excluding proficiency flights, during the last 12 months, how many times have you:

C5C58-60	filed IFR?	_____
C4C37-38	had to hold?	_____
C4C39-40	executed a missed approach?	_____
C5C61-63	been rerouted?	_____
C4C43-44	diverted to an alternate?	_____
C4C45-46	asked for an altitude change due to icing?	_____
C4C47-48	asked for a route change due to thunderstorms?	_____
C4C49-50	declared an emergency?	_____
C4C51-52	requested special handling?	_____

FILED IFR

C5C58-60	FREQ	PERCENT
0	218	13.465
1	28	1.729
2	40	2.471
3	57	3.521
4	68	4.200
5	59	3.644
6	78	4.818
7	21	1.297
8	43	2.656
9	6	0.371
10- 19	325	20.074
20- 29	223	13.774
30- 39	80	4.941
40- 49	55	3.397
50- 59	91	5.621
60- 69	27	1.668
70- 79	24	1.482
80- 89	7	0.432
90- 99	7	0.432
100-119	59	3.644
120-129	7	0.432

FILED IFR (con.)

C5C58-60	FREQ	PERCENT
130-139	1	0.062
140-149	1	0.062
150-169	18	1.112
170-179	2	0.124
180-189	3	0.185
190-199	2	0.124
200-219	22	1.359
220-239	1	0.062
240-249	3	0.185
250-259	1	0.062
260-299	1	0.062
300-319	18	1.112
320-349	1	0.062
350-359	3	0.185
360-399	1	0.062
400-499	5	0.309
500-599	8	0.494
600-899	2	0.124
900-949	1	0.062
950-959	1	0.062
960 and up	1	0.062

HOLD

C4C37-38	FREQ	PERCENT
0	756	46.695
1	252	15.565
2	221	13.650
3	109	6.733
4	33	2.038
5	85	5.250
6	35	2.162
7	5	0.309
8	9	0.556

HOLD (con.)

C4C37-38	FREQ	PERCENT
9	1	0.062
10-19	86	5.312
20-29	16	0.988
30-39	4	0.247
40-49	1	0.062
50-59	3	0.185
60-69	1	0.062
70-79	1	0.062
80 and up	1	0.062

TABLE B32 - CONTINUED

MISSED APR

C4C39-40	FREQ	PERCENT
0	1006	62.137
1	240	14.824
2	161	9.944
3	70	4.324
4	36	2.224
5	46	2.841
6	13	0.803

MISSED APR (con.)

C4C39-40	FREQ	PERCENT
7	3	0.185
8	3	0.185
10-19	28	1.729
20-29	10	0.618
30-39	1	0.062
40-69	1	0.062
70 and up	1	0.062

REROUTED

C5C61-63	FREQ	PERCENT
0	490	30.266
1	173	10.686
2	184	11.365
3	137	8.462
4	72	4.447
5	116	7.165
6	55	3.397
7	9	0.556
8	34	2.100
9	2	0.124
10- 19	190	11.736
20- 29	80	4.941

REROUTED (con.)

C5C61-63	FREQ	PERCENT
30- 39	19	1.174
40- 49	8	0.494
50- 69	24	1.482
70- 79	4	0.247
80- 89	2	0.124
90- 99	1	0.062
100-119	12	0.741
120-149	3	0.185
150-199	2	0.124
200-269	1	0.062
270 and up	1	0.062

ALTERNATE

C4C43-44	FREQ	PERCENT
0	1190	73.502
1	226	13.959
2	116	7.165
3	32	1.977
4	10	0.618

ALTERNATE (con.)

C4C43-44	FREQ	PERCENT
5	22	1.359
6	4	0.247
8	3	0.185
10-19	15	0.926
20 and up	1	0.062

ALTITUDE CHANGE/ICING

C4C45-46	FREQ	PERCENT
0	846	52.254
1	249	15.380
2	188	11.612
3	82	5.065
4	49	3.027
5	68	4.200
6	20	1.235
7	3	0.185

ALTITUDE CHANGE/ICING (con.)

C4C45-46	FREQ	PERCENT
8	10	0.618
9	1	0.062
10-19	57	3.521
20-29	31	1.915
30-49	6	0.371
50-69	8	0.494
70 and up	1	0.062

TABLE B32 - CONCLUDED

ROUTE CHANGE/TH-STORMS

C4C47-48	FREQ	PERCENT
0	676	41.754
1	205	12.662
2	184	11.365
3	110	6.794
4	57	3.521
5	91	5.621
6	38	2.347
7	16	0.988
8	15	0.926

ROUTE CHANGE/TH-STORMS (con.)

C4C47-48	FREQ	PERCENT
9	1	0.062
10-19	138	8.524
20-29	49	3.027
30-39	19	1.174
40-49	5	0.309
50-59	10	0.618
60-69	2	0.124
70 and up	3	0.185

EMERGENCY

C4C49-50	FREQ	PERCENT
0	1550	95.738
1	54	3.335
2	12	0.741
3	2	0.124
7	1	0.062

SPECIAL HANDLING

C4C51-52	FREQ	PERCENT
0	1411	87.153
1	143	8.833
2	29	1.791
3	15	0.926
4	2	0.124
5	5	0.309
6	2	0.124
7	2	0.124
10-19	6	0.371
20-69	1	0.062
70 and up	3	0.185

TABLE B33 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 6, QUESTION 33

SECTION 6: Flying Experience

33. In what year did you originally receive the following certificates and/or ratings?

C4C53-54	Private:	19__	C4C59-60	Multiengine:	19__
C4C55-56	Commercial:	19__	C4C61-62	ATP:	19__
C4C57-58	Instrument:	19__	C4C63-64	Flight instructor/ instrument:	19__

PRIVATE

C4C53-54	FREQ	PERCENT
0	149	9.203
1929	2	0.124
1931	1	0.062
1935	2	0.124
1936	2	0.124
1937	5	0.309
1938	2	0.124
1939	7	0.432
1940	15	0.926
1941	11	0.679
1942	9	0.556
1943	4	0.247
1944	7	0.432
1945	23	1.421
1946	20	1.235
1947	10	0.618
1948	15	0.926
1949	8	0.494
1950	13	0.803
1951	11	0.679
1952	12	0.741
1953	10	0.618
1954	20	1.235
1955	15	0.926
1956	30	1.853

PRIVATE (con.)

C4C53-54	FREQ	PERCENT
1957	17	1.050
1958	19	1.174
1959	25	1.544
1960	33	2.038
1961	21	1.297
1962	22	1.359
1963	28	1.729
1964	48	2.965
1965	66	4.077
1966	54	3.335
1967	70	4.324
1968	75	4.632
1969	69	4.262
1970	103	6.362
1971	59	3.644
1972	93	5.744
1973	79	4.880
1974	81	5.003
1975	76	4.694
1976	65	4.015
1977	58	3.582
1978	43	2.656
1979	11	0.679
1981	1	0.062

COMMERCIAL

C4C55-56	FREQ	PERCENT
0	368	22.730
1931	3	0.185
1935	1	0.062
1937	2	0.124
1938	2	0.124
1939	4	0.247

COMMERCIAL (con.)

C4C55-56	FREQ	PERCENT
1940	8	0.494
1941	5	0.309
1942	7	0.432
1943	4	0.247
1944	10	0.618
1945	25	1.544

TABLE B33 - CONTINUED

MULTIENGINE

C4C59-60	FREQ	PERCENT
0	531	32.798
1940	1	0.062
1941	4	0.247
1942	10	0.618
1943	10	0.618
1944	12	0.741
1945	21	1.297
1946	8	0.494
1947	7	0.432
1948	3	0.185
1949	5	0.309
1950	3	0.185
1952	8	0.494
1953	6	0.371
1954	6	0.371
1955	13	0.803
1956	11	0.679
1957	16	0.988
1958	17	1.050
1959	5	0.309
1960	18	1.112

MULTIENGINE (con.)

C4C59-60	FREQ	PERCENT
1961	9	0.556
1962	21	1.297
1963	17	1.050
1964	22	1.359
1965	24	1.482
1966	42	2.594
1967	35	2.162
1968	42	2.594
1969	47	2.903
1970	46	2.841
1971	37	2.285
1972	48	2.965
1973	56	3.459
1974	63	3.891
1975	66	4.077
1976	57	3.521
1977	58	3.582
1978	89	5.497
1979	69	4.262
1980	56	3.459

ATP

C4C61-62	FREQ	PERCENT
0	1246	76.961
1941	2	0.124
1942	2	0.124
1944	1	0.062
1945	6	0.371
1946	5	0.309
1948	1	0.062
1949	5	0.309
1950	1	0.062
1952	1	0.062
1953	2	0.124
1954	1	0.062
1955	3	0.185
1956	2	0.124
1957	6	0.371
1958	1	0.062
1959	7	0.432
1960	2	0.124
1962	2	0.124

ATP (con.)

C4C61-62	FREQ	PERCENT
1963	5	0.309
1964	3	0.185
1965	7	0.432
1966	3	0.185
1967	9	0.556
1968	14	0.865
1969	16	0.988
1970	23	1.421
1971	6	0.371
1972	11	0.679
1973	16	0.988
1974	14	0.865
1975	11	0.679
1976	21	1.297
1977	17	1.050
1978	30	1.853
1979	54	3.335
1980	59	3.644
1981	4	0.247

TABLE B33 - CONTINUED

COMMERCIAL

C4C55-56	FREQ	PERCENT
1946	11	0.679
1947	7	0.432
1948	6	0.371
1949	2	0.124
1950	4	0.247
1951	2	0.124
1952	12	0.741
1953	8	0.494
1954	11	0.679
1955	18	1.112
1956	18	1.112
1957	22	1.359
1958	19	1.174
1959	7	0.432
1960	17	1.050
1961	7	0.432
1962	24	1.482
1963	19	1.174

COMMERCIAL (con.)

C4C55-56	FREQ	PERCENT
1964	23	1.421
1965	35	2.162
1966	42	2.594
1967	55	3.397
1968	49	3.027
1969	55	3.397
1970	61	3.768
1971	48	2.965
1972	63	3.891
1973	72	4.447
1974	83	5.127
1975	54	3.335
1976	65	4.015
1977	62	3.830
1978	89	5.497
1979	70	4.324
1980	39	2.409
1981	1	0.062

INSTRUMENT

C4C57-58	FREQ	PERCENT
0	41	2.532
1939	1	0.062
1940	3	0.185
1941	4	0.247
1942	10	0.618
1943	6	0.371
1944	8	0.494
1945	14	0.865
1946	9	0.556
1947	2	0.124
1948	4	0.247
1949	4	0.247
1950	5	0.309
1951	3	0.185
1952	7	0.432
1953	8	0.494
1954	8	0.494
1955	15	0.926
1956	22	1.359
1957	20	1.235
1958	18	1.112
1959	6	0.371

INSTRUMENT (con.)

C4C57-58	FREQ	PERCENT
1960	20	1.235
1961	8	0.494
1962	21	1.297
1963	17	1.050
1964	25	1.544
1965	39	2.409
1966	49	3.027
1967	69	4.262
1968	48	2.965
1969	73	4.509
1970	62	3.830
1971	58	3.582
1972	79	4.880
1973	92	5.683
1974	95	5.868
1975	108	6.671
1976	106	6.547
1977	125	7.721
1978	147	9.080
1979	141	8.709
1980	18	1.112
1981	1	0.062

TABLE B33 - CONCLUDED

INSTRUCTOR

C4C63-64	FREQ	PERCENT
0	986	60.902
1940	4	0.247
1941	2	0.124
1942	10	0.618
1943	3	0.185
1946	7	0.432
1948	1	0.062
1949	2	0.124
1950	3	0.185
1952	4	0.247
1954	5	0.309
1955	7	0.432
1956	1	0.062
1957	3	0.185
1958	3	0.185
1959	3	0.185
1960	9	0.556
1961	3	0.185
1962	7	0.432

INSTRUCTOR (con.)

C4C63-64	FREQ	PERCENT
1963	8	0.494
1964	8	0.494
1965	20	1.235
1966	11	0.679
1967	25	1.544
1968	22	1.359
1969	22	1.359
1970	23	1.421
1971	17	1.050
1972	20	1.235
1973	40	2.471
1974	30	1.853
1975	41	2.532
1976	25	1.544
1977	50	3.088
1978	64	3.953
1979	58	3.582
1980	70	4.324
1981	2	0.124

TABLE B34 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 6, QUESTION 34

34. In what type of flying were you most often engaged during the last 12 months?

	All flying (check one) C4CC65	Single pilot IFR flying (check one) C4CC66
general aviation		
business (not for hire)	1	1
business (corporate pilot)	2	2
air taxi or charter	3	3
giving instruction	4	4
other commercial	5	5
personal (pleasure)	6	6
airline	7	7
military	8	8

ALL FLYING

C4CC65	FREQ	PERCENT
0	76	4.694
1	450	27.795
2	140	8.647
3	105	6.485
4	213	13.156
5	43	2.656
6	455	28.104
7	88	5.435
8	49	3.027

SPIFR FLYING

C4CC66	FREQ	PERCENT
0	251	15.503
1	466	28.783
2	140	8.647
3	122	7.536
4	89	5.497
5	38	2.347
6	513	31.686
7	0	0.000
8	0	0.000

TABLE B35 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 6, QUESTION 35

35. During the last 12 months, how often, on the average, did you fly?

	VFR (check one) C4CC67	on an IFR flight plan (check one) C4CC68	in actual IFR conditions (check one) C4CC69
less than once per month	[1]	[1]	[1]
about monthly	[2]	[2]	[2]
about twice per month	[3]	[3]	[3]
about four times per month	[4]	[4]	[4]
more than four times per month	[5]	[5]	[5]

VFR

C4CC67	FREQ	PERCENT
0	122	7.536
1	147	9.080
2	136	8.400
3	223	13.774
4	265	16.368
5	723	44.657
6	3	0.185

ACTUAL IFR

C4CC69	FREQ	PERCENT
0	111	6.856
1	654	40.395
2	219	13.527
3	214	13.218
4	122	7.536
5	298	18.406
6	1	0.062

IFR FLIGHT PLAN

C4CC68	FREQ	PERCENT
0	99	6.115
1	363	22.421
2	254	15.689
3	264	16.306
4	172	10.624
5	465	28.721
6	2	0.124

TABLE B36 - IFR SINGLE PLOT QUESTIONNAIRE
RESPONSES TO SECTION 6, QUESTION 36

36. Place yourself on a scale of all instrument pilots in terms of your opinion of your present skill, knowledge, and experience:

		low					high
C4CC70	skill	1	2	3	4	5	6
C4CC71	knowledge	☐	☐	☐	☐	☐	☐
C4CC72	experience	☐	☐	☐	☐	☐	☐

SKILL

C4CC70	FREQ	PERCENT
0	30	1.853
1	30	1.853
2	102	6.300
3	298	18.406
4	490	30.266
5	458	28.289
6	211	13.033

EXPERIENCE

C4CC72	FREQ	PERCENT
0	29	1.791
1	115	7.103
2	232	14.330
3	306	18.901
4	348	21.495
5	311	19.209
6	278	17.171

KNOWLEDGE

C4CC71	FREQ	PERCENT
0	29	1.791
1	15	0.926
2	47	2.903
3	201	12.415
4	497	30.698
5	552	34.095
6	278	17.171

TABLE B37 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 6, QUESTION 37

37. What is your approximate flight time in hours?

	in last 12 mos.	total
total time	C5C6-9	C5C10-14
total pilot in command	C5C15-18	C5C19-23
actual instrument	C5C24-26	C5C27-30
single pilot actual instrument	C5C31-33	C5C34-37
simulated instrument in an airplane	C5C38-39	C5C40-43
ground trainer	C5C44-45	C5C46-49

TOTAL TIME/12 MOS.

C5C6-9	FREQ	PERCENT
0	68	4.200
1- 19	65	4.015
20- 39	93	5.744
40- 59	125	7.721
60- 79	83	5.127
80- 99	65	4.015
100-119	171	10.562
120-139	74	4.571
140-159	93	5.744
160-179	21	1.297
180-199	9	0.556
200-219	108	6.671
220-239	13	0.803
240-259	64	3.953
260-279	12	0.741
280-299	7	0.432
300-319	88	5.435
320-339	7	0.432
340-359	27	1.668
360-379	4	0.247
380-399	2	0.124
400-419	72	4.447
420-439	3	0.185
440-459	17	1.050
460-479	2	0.124
480-499	5	0.309
500-519	57	3.521
520-539	2	0.124
540-559	3	0.185

TOTAL TIME/12 MOS. (con.)

C5C6-9	FREQ	PERCENT
560-579	2	0.124
580-599	3	0.185
600-619	69	4.262
620-639	2	0.124
640-659	7	0.432
660-679	1	0.062
680-699	1	0.062
700-719	34	2.100
720-739	1	0.062
740-759	9	0.556
760-799	1	0.062
800-839	43	2.656
840-859	2	0.124
860-899	1	0.062
900-919	23	1.421
920-939	1	0.062
940-959	3	0.185
960-999	2	0.124
1000-1099	29	1.791
1100-1199	7	0.432
1200-1299	7	0.432
1300-1399	1	0.062
1400-1499	2	0.124
1500-1599	2	0.124
1600-1999	1	0.062
2000-2199	2	0.124
2200-2399	2	0.124
6500 and up	1	0.062

TABLE B37 - CONTINUED

TOTAL TIME/TOTAL

C5C10-14	FREQ	PERCENT
0	41	2.532
1-99	4	0.247
100-199	4	0.247
200-299	21	1.297
300-399	79	4.880
400-499	72	4.447
500-599	75	4.632
600-699	60	3.706
700-799	60	3.706
800-899	62	3.830
900-999	35	2.162
1000-1099	68	4.200
1100-1199	20	1.235
1200-1299	42	2.594
1300-1399	17	1.050
1400-1499	14	0.865
1500-1599	58	3.582
1600-1699	31	1.915
1700-1799	23	1.421
1800-1899	25	1.544
1900-1999	14	0.865
2000-2099	53	3.274
2100-2199	21	1.297
2200-2299	27	1.668
2300-2399	12	0.741
2400-2499	11	0.679
2500-2599	30	1.853
2600-2699	12	0.741
2700-2799	7	0.432
2800-2899	14	0.865
2900-2999	5	0.309
3000-3099	48	2.965
3100-3199	6	0.371
3200-3299	12	0.741
3300-3399	17	1.050
3400-3499	4	0.247
3500-3599	24	1.482
3600-3699	14	0.865
3700-3799	3	0.185
3800-3899	8	0.494
3900-3999	1	0.062
4000-4199	30	1.853
4200-4299	5	0.309
4300-4399	1	0.062
4400-4499	4	0.247
4500-4599	13	0.803
4600-4699	4	0.247
4700-4799	4	0.247

TOTAL TIME/TOTAL (con.)

C5C10-14	FREQ	PERCENT
4800-4899	6	0.371
4900-4999	4	0.247
5000-5199	41	2.532
5200-5299	4	0.247
5300-5399	5	0.309
5400-5499	6	0.371
5500-5599	8	0.494
5600-5699	1	0.062
5700-5799	3	0.185
5800-5899	6	0.371
5900-5999	2	0.124
6000-6099	28	1.729
6100-6199	3	0.185
6200-6299	3	0.185
6300-6399	3	0.185
6400-6499	1	0.062
6500-6599	16	0.988
6600-6699	5	0.309
6700-6799	3	0.185
6800-6899	1	0.062
6900-6999	3	0.185
7000-7199	22	1.359
7200-7299	2	0.124
7300-7399	4	0.247
7400-7499	2	0.124
7500-7599	12	0.741
7600-7699	1	0.062
7700-7999	4	0.247
8000-8299	23	1.421
8300-8499	1	0.062
8500-8599	6	0.371
8600-8799	2	0.124
8800-8899	1	0.062
8900-8999	1	0.062
9000-9099	14	0.865
9100-9199	1	0.062
9200-9499	1	0.062
9500-9799	3	0.185
9800-9999	1	0.062
10000-10199	16	0.988
10200-10299	1	0.062
10300-10499	1	0.062
10500-10799	4	0.247
10800-10999	2	0.124
11000-11199	7	0.432
11200-11799	1	0.062
11800-11999	1	0.062
12000-12099	20	1.235

TABLE B37 - CONTINUED

TOTAL TIME/TOTAL

C5C10-14	FREQ	PERCENT
12100-12199	1	0.062
12200-12399	1	0.062
12400-12499	1	0.062
12500-12999	3	0.185
13000-13099	8	0.494
13100-13299	1	0.062
13300-13499	1	0.062
13500-13999	1	0.062
14000-14199	8	0.494
14200-14799	1	0.062
14800-14999	1	0.062
15000-15999	16	0.988
16000-17499	6	0.371
17500-17599	2	0.124
17600-17899	1	0.062
17900-17999	1	0.062
18000-18499	7	0.432
18500-18999	1	0.062
19000-19299	1	0.062
19300-19499	1	0.062
19500-19999	1	0.062

TOTAL TIME/TOTAL (con.)

C5C10-14	FREQ	PERCENT
20000-20199	5	0.309
20200-20499	1	0.062
20500-20999	1	0.062
21000-21999	3	0.185
22000-22099	1	0.062
22100-23199	1	0.062
23200-23999	1	0.062
24000-24999	3	0.185
25000-25299	4	0.247
25300-25999	1	0.062
26000-26499	3	0.185
26500-27799	1	0.062
27800-28499	1	0.062
28500-28999	1	0.062
29000-29999	1	0.062
30000-31499	2	0.124
31500-31699	1	0.062
31800-41999	1	0.062
42000-42999	1	0.062
43000 and up	1	0.062

PILOT IN COMMAND/12 MOS.

C5C15-18	FREQ	PERCENT
0	101	6.238
1-19	81	5.003
20-39	94	5.806
40-59	134	8.277
60-79	99	6.115
80-99	81	5.003
100-119	158	9.759
120-139	53	3.274
140-159	85	5.250
160-179	18	1.112
180-199	16	0.988
200-219	114	7.041
220-239	17	1.050
240-259	60	3.706
260-279	13	0.803
280-299	17	1.050
300-319	75	4.632
320-339	6	0.371
340-359	30	1.853
360-379	7	0.432
380-399	9	0.556
400-419	63	3.891

PILOT IN COMMAND/12 MOS. (con.)

C5C15-18	FREQ	PERCENT
420-439	2	0.124
440-459	13	0.803
460-479	2	0.124
480-499	10	0.618
500-519	47	2.903
520-539	4	0.247
540-559	5	0.309
560-579	4	0.247
580-599	7	0.432
600-639	43	2.656
640-659	4	0.247
660-679	1	0.062
680-699	3	0.185
700-719	25	1.544
720-739	2	0.124
740-779	8	0.494
780-799	2	0.124
800-819	30	1.853
820-839	1	0.062
840-859	3	0.185
860-879	2	0.124
880-899	1	0.062

TABLE B37 - CONTINUED

PILOT IN COMMAND/12 MOS.

C5C15-18	FREQ	PERCENT
900-939	16	0.988
940-959	1	0.062
960-979	1	0.062
980-999	1	0.062
1000-1039	23	1.421
1040-1099	1	0.062
1100-1199	4	0.247
1200-1239	5	0.309
1240-1399	1	0.062
1400-1499	1	0.062

PILOT IN COMMAND/12 MOS. (con.)

C5C15-18	FREQ	PERCENT
1500-1599	2	0.124
1600-1699	1	0.062
1700-1999	1	0.062
2000-2499	4	0.247
2500-2799	1	0.062
2800-3999	1	0.062
4000-5799	2	0.124
5800-5839	1	0.062
5840-6499	1	0.062
6500 and up	1	0.062

PILOT IN COMMAND/TOTAL

C5C19-23	FREQ	PERCENT
0	76	4.694
1-99	6	0.371
100-199	35	2.162
200-299	74	4.571
300-399	83	5.127
400-499	73	4.509
500-599	58	3.582
600-699	70	4.324
700-799	55	3.397
800-899	50	3.088
900-999	53	3.274
1000-1099	51	3.150
1100-1199	22	1.359
1200-1299	33	2.038
1300-1399	25	1.544
1400-1499	35	2.162
1500-1599	50	3.088
1600-1699	25	1.544
1700-1799	22	1.359
1800-1899	25	1.544
1900-1999	17	1.050
2000-2099	56	3.459
2100-2199	19	1.174
2200-2299	12	0.741
2300-2399	14	0.865
2400-2499	16	0.988
2500-2599	22	1.359
2600-2699	12	0.741
2700-2799	9	0.556
2800-2899	25	1.544
2900-2999	13	0.803
3000-3099	34	2.100
3100-3199	10	0.618

PILOT IN COMMAND/TOTAL (con.)

C5C19-23	FREQ	PERCENT
3200-3299	8	0.494
3300-3399	7	0.432
3400-3499	3	0.185
3500-3599	24	1.482
3600-3699	5	0.309
3700-3799	3	0.185
3800-3899	9	0.556
3900-3999	2	0.124
4000-4099	27	1.668
4100-4199	2	0.124
4200-4299	5	0.309
4300-4399	6	0.371
4400-4499	5	0.309
4500-4599	19	1.174
4600-4699	6	0.371
4700-4799	6	0.371
4800-4899	8	0.494
4900-4999	2	0.124
5000-5099	23	1.421
5100-5199	2	0.124
5200-5299	5	0.309
5300-5499	2	0.124
5500-5599	16	0.988
5600-5699	3	0.185
5700-5799	5	0.309
5800-5899	8	0.494
5900-5999	1	0.062
6000-6099	9	0.556
6100-6199	4	0.247
6200-6299	3	0.185
6300-6399	2	0.124
6400-6499	2	0.124
6500-6599	8	0.494

TABLE B37 - CONTINUED

PILOT IN COMMAND/TOTAL

C5C19-23	FREQ	PERCENT
6600-6699	2	0.124
6700-6799	5	0.309
6800-6999	2	0.124
7000-7099	26	1.606
7100-7199	2	0.124
7200-7299	1	0.062
7300-7499	1	0.062
7500-7599	9	0.556
7600-7699	3	0.185
7700-7799	2	0.124
7800-7899	2	0.124
7900-7999	1	0.062
8000-8399	15	0.926
8400-8499	2	0.124
8500-8599	4	0.247
8600-8799	1	0.062
8800-8899	2	0.124
8900-8999	1	0.062
9000-9499	7	0.432
9500-9999	4	0.247
10000-10199	14	0.865
10200-10299	2	0.124
10300-10499	2	0.124
10500-10799	1	0.062
10800-10999	1	0.062
11000-11099	6	0.371
11100-11499	1	0.062
11500-11799	4	0.247
11800-11899	2	0.124
11900-11999	1	0.062
12000-12099	10	0.618
12100-12499	1	0.062
12500-12799	2	0.124

PILOT IN COMMAND/TOTAL (con.)

C5C19-23	FREQ	PERCENT
12800-12999	1	0.062
13000-13499	3	0.185
13500-13699	1	0.062
13700-13899	1	0.062
13900-13999	1	0.062
14000-14499	5	0.309
14500-14999	1	0.062
15000-15299	5	0.309
15300-15499	1	0.062
15500-15699	1	0.062
15700-15999	1	0.062
16000-16999	2	0.124
17000-17299	4	0.247
17300-17499	1	0.062
17500-17599	2	0.124
17600-17799	1	0.062
17800-17999	1	0.062
18000-18499	5	0.309
18500-18799	1	0.062
18800-19999	1	0.062
20000-20199	5	0.309
20200-21999	1	0.062
22000-23499	2	0.124
23500-23999	1	0.062
24000-24999	2	0.124
25000-25999	2	0.124
26000-27999	1	0.062
28000-28499	2	0.124
28500-29999	1	0.062
30000-31599	1	0.062
31600-39999	1	0.062
40000 and up	2	0.124

ACTUAL IFR/12 MOS.

C5C24-26	FREQ	PERCENT
0	205	12.662
1-19	717	44.287
20-39	306	18.901
40-59	175	10.809
60-79	64	3.953
80-99	32	1.977
100-119	54	3.335
120-139	7	0.432
140-159	17	1.050
160-199	3	0.185

ACTUAL IFR/12 MOS. (con.)

C5C24-26	FREQ	PERCENT
200-219	17	1.050
220-239	1	0.062
240-259	10	0.618
260-279	1	0.062
280-299	1	0.062
300-339	5	0.309
340-359	1	0.062
360-459	1	0.062
460-699	1	0.062
700 and up	1	0.062

TABLE B37 - CONTINUED

ACTUAL IFR/TOTAL

C5C27-30	FREQ	PERCENT
0	104	6.424
1-99	575	35.516
100-199	240	14.824
200-299	161	9.944
300-399	106	6.547
400-499	78	4.818
500-599	71	4.385
600-699	40	2.471
700-799	31	1.915
800-899	27	1.668
900-999	7	0.432
1000-1099	32	1.977
1100-1199	4	0.247
1200-1299	26	1.606
1300-1399	1	0.062
1400-1499	5	0.309
1500-1599	19	1.174
1600-1699	2	0.124
1700-1799	2	0.124

ACTUAL IFR/TOTAL (con.)

C5C27-30	FREQ	PERCENT
1800-1999	7	0.432
2000-2099	28	1.729
2100-2299	4	0.247
2300-2399	2	0.124
2400-2499	2	0.124
2500-2599	8	0.494
2600-2799	1	0.062
2800-2899	2	0.124
2900-2999	2	0.124
3000-3499	8	0.494
3500-3999	3	0.185
4000-4299	8	0.494
4300-4499	1	0.062
4500-4999	1	0.062
5000-5199	3	0.185
5200-5999	1	0.062
6000-7999	4	0.247
8000 and up	3	0.185

ACTUAL SPIFR/12 MOS.

C5C31-33	FREQ	PERCENT
0	282	17.418
1-19	789	48.734
20-39	277	17.109
40-59	141	8.709
60-79	41	2.532
80-99	22	1.359
100-119	27	1.668
120-139	4	0.247
140-159	12	0.741
160-199	3	0.185

ACTUAL SPIFR/12 MOS. (con.)

C5C31-33	FREQ	PERCENT
200-219	9	0.556
220-239	1	0.062
240-259	3	0.185
260-279	2	0.124
280-299	1	0.062
300-339	2	0.124
340-399	1	0.062
400-499	1	0.062
500 and up	1	0.062

ACTUAL SPIFR/TOTAL

C5C34-37	FREQ	PERCENT
0	150	9.265
1-9	111	6.856
10-19	125	7.721
20-29	128	7.906
30-39	67	4.138
40-49	65	4.015
50-59	99	6.115
60-69	41	2.532
70-79	34	2.100

ACTUAL SPIFR/TOTAL (con.)

C5C34-37	FREQ	PERCENT
80-89	27	1.668
90-99	21	1.297
100-199	262	16.183
200-299	156	9.636
300-399	88	5.435
400-499	59	3.644
500-599	49	3.027
600-699	28	1.729
700-799	15	0.926

TABLE B37 - CONTINUED

ACTUAL SPIFR/TOTAL

C5C34-37	FREQ	PERCENT
800-899	16	0.988
900-999	7	0.432
1000-1099	23	1.421
1100-1199	1	0.062
1200-1299	14	0.865
1300-1399	4	0.247
1400-1499	1	0.062
1500-1599	7	0.432
1600-1699	1	0.062
1700-1899	2	0.124

ACTUAL SPIFR/TOTAL (con.)

C5C34-37	FREQ	PERCENT
1900-1999	1	0.062
2000-2299	8	0.494
2300-2499	1	0.062
2500-2799	1	0.062
2800-3499	1	0.062
3500-3999	2	0.124
4000-4999	1	0.062
5000-5999	2	0.124
6000 and up	1	0.062

SIMULATED IFR-AIRPLANE/12 MOS.

C5C38-39	FREQ	PERCENT
0	477	29.463
1	49	3.027
2	134	8.277
3	85	5.250
4	72	4.447
5	139	8.586
6	74	4.571
7	18	1.112
8	37	2.285
9	7	0.432
10	162	10.006
11	6	0.371

SIMULATED IFR-AIRPLANE/12 MOS.

C5C38-39	FREQ	PERCENT
12	35	2.162
13	7	0.432
14	7	0.432
15	53	3.274
16	5	0.309
17	3	0.185
18	8	0.494
19	1	0.062
20-39	178	10.994
40-59	47	2.903
60-79	13	0.803
80 and up	2	0.124

SIMULATED IFR-AIRPLANE/TOTAL

C5C40-43	FREQ	PERCENT
0	180	11.118
1-9	16	0.988
10-19	47	2.903
20-29	74	4.571
30-39	81	5.003
40-49	138	8.524
50-59	190	11.736
60-69	130	8.030
70-79	102	6.300
80-89	58	3.582
90-99	35	2.162
100-199	284	17.542
200-299	116	7.165
300-399	55	3.397
400-499	21	1.297

SIMULATED IFR-AIRPLANE/TOTAL

C5C40-43	FREQ	PERCENT
500-599	26	1.606
600-699	12	0.741
700-799	7	0.432
800-899	10	0.618
900-999	2	0.124
1000-1099	16	0.988
1100-1199	1	0.062
1200-1499	3	0.185
1500-1799	5	0.309
1800-1899	2	0.124
1900-1999	1	0.062
2000-2499	4	0.247
2500-2999	1	0.062
3000-3499	1	0.062
3500 and up	1	0.062

TABLE B37 - CONCLUDED

GROUND TRAINER/12 MOS.

C5C44-45	FREQ	PERCENT
0	1217	75.170
1-19	317	19.580
20-39	71	4.385
40-59	9	0.556
60 & up	5	0.309

GROUND TRAINER/TOTAL

C5C46-49	FREQ	PERCENT
0	644	39.778
1-9	204	12.600
10-19	165	10.191
20-29	119	7.350
30-39	59	3.644
40-49	30	1.853
50-59	76	4.694
60-69	20	1.235
70-79	17	1.050
80-89	15	0.926
90-99	7	0.432
100-199	103	6.362
200-299	67	4.138

GROUND TRAINER/TOTAL (con.)

C5C46-49	FREQ	PERCENT
300-399	33	2.038
400-499	20	1.235
500-599	20	1.235
600-699	4	0.247
700-799	1	0.062
800-899	1	0.062
900-999	1	0.062
1000-1099	9	0.556
1100-1199	1	0.062
1200-1499	1	0.062
1500-1999	1	0.062
2000 and up	1	0.062

TABLE B38 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 6, QUESTION 38

38. C5C50-51 Age: ____ C5CC52 [1] male [2] female

AGE

C5C50-51	FREQ	PERCENT
0	37	2.285
18	1	0.062
19	3	0.185
20	5	0.309
21	11	0.679
22	13	0.803
23	25	1.544
24	22	1.359
25	29	1.791
26	29	1.791
27	27	1.668
28	35	2.162
29	34	2.100
30	36	2.224
31	42	2.594
32	51	3.150
33	58	3.582
34	76	4.694
35	56	3.459
36	49	3.027
37	56	3.459
38	56	3.459
39	50	3.088
40	59	3.644
41	43	2.656
42	43	2.656
43	39	2.409
44	37	2.285
45	40	2.471
46	31	1.915

AGE (con.)

C5C50-51	FREQ	PERCENT
47	36	2.224
48	46	2.841
49	41	2.532
50	42	2.594
51	36	2.224
52	32	1.977
53	30	1.853
54	23	1.421
55	32	1.977
56	29	1.791
57	24	1.482
58	20	1.235
59	31	1.915
60	20	1.235
61	16	0.988
62	19	1.174
63	8	0.494
64	8	0.494
65	8	0.494
66	5	0.309
67	8	0.494
68	1	0.062
69	3	0.185
70	2	0.124
71	1	0.062
72	1	0.062
73	1	0.062
76	1	0.062
77	1	0.062
79	1	0.062

SEX

C5CC52	FREQ	PERCENT
0	38	2.347
1	1536	94.873
2	45	2.779

TABLE B39 - IFR SINGLE PILOT QUESTIONNAIRE
RESPONSES TO SECTION 6, QUESTION 39

39. Are there any general comments you wish to make about IFR single pilot flying which you think might be useful for us to know?
C5C53-54

C5C53-54*	FREQ	PERCENT
0	1010	62.3842
99	133	8.2149
98	84	5.1884
4	31	1.9148
21	29	1.7912
23	29	1.7912
7	27	1.6677
19	27	1.6677
27	21	1.2971
15	16	0.9883
2	14	0.8647
10	13	0.8030
28	11	0.6794
33	10	0.6177
3	9	0.5559
38	8	0.4941
1	7	0.4324
24	7	0.4324
35	7	0.4324
20	6	0.3706
37	6	0.3706
49	6	0.3706
6	5	0.3088
8	5	0.3088
12	5	0.3088
18	5	0.3088
34	5	0.3088
39	4	0.2471
44	4	0.2471
50	4	0.2471
5	3	0.1853
13	3	0.1853
16	3	0.1853
25	3	0.1853
32	3	0.1853

C5C53-54*	FREQ	PERCENT
36	3	0.1853
45	3	0.1853
54	3	0.1853
55	3	0.1853
56	3	0.1853
57	3	0.1853
14	2	0.1235
29	2	0.1235
30	2	0.1235
40	2	0.1235
43	2	0.1235
46	2	0.1235
52	2	0.1235
53	2	0.1235
63	2	0.1235
69	2	0.1235
9	1	0.0618
11	1	0.0618
17	1	0.0618
22	1	0.0618
26	1	0.0618
31	1	0.0618
41	1	0.0618
42	1	0.0618
47	1	0.0618
48	1	0.0618
51	1	0.0618
58	1	0.0618
59	1	0.0618
61	1	0.0618
64	1	0.0618
65	1	0.0618
66	1	0.0618
72	1	0.0618

*Refer to code explanations on pages 179-181

TABLE B39 - CONTINUED

39. Are there any general comments you wish to make about IFR single pilot flying which you think might be useful for us to know?

00 - No answer
98 - None
99 - Unusable reply

01 - Opposes regulations which restrict freedom
02 - More timely weather information
03 - SPIFR not appropriate for business/commercial flying
04 - SPIFR requires training and currency
05 - Lower cost autopilot/weather radar to reduce workload

06 - Trying to stay current is difficult
07 - SPIFR is not safe
08 - Pilots should file IFR more often
09 - Helicopter IFR flight is different
10 - Instrument rating alone is a minimum qualification

11 - Instrument pilots should visit ATC facilities
12 - Controller training is inadequate
13 - System needs upgrading
14 - Too much flying IFR in VFR conditions
15 - Organization and planning required for SPIFR flight

16 - Pilots fear SPIFR flying
17 - Eliminate holding patterns
18 - System is too complicated for nonprofessional pilot
19 - Workload on SPIFR is too high
20 - Require private pilots to have instrument training

21 - Use autopilot
22 - IFR flight tests should be given in IMC
23 - SPIFR is safe if aircraft/personal limitations are observed
24 - Controllers do a good job
25 - Require an annual flight test and written exam for currency

26 - Controllers talk too fast
27 - All IFR operations should require two pilots
28 - Cost of staying current
29 - Too much radar vectoring through TCA's
30 - The system must consider the IFR general aviation single pilot

TABLE B39 - CONTINUED

31 - Wing leveler should be required for SPIFR
32 - Safety should come first
33 - Change the FAR on currency
34 - Need more education concerning weather decisions
35 - The pilot and ATC should work together more

36 - SPIFR operators should be required to have a boom microphone
37 - Lack of experience in the system
38 - Not enough actual IFR, too much time spent under the hood
39 - Redesign the cockpit to provide space to hold charts
40 - Too many frequency changes on an IFR flight plan

41 - SPIFR with passengers for hire should require higher minimums
42 - Positional awareness
43 - Fly first, do not be distracted by the radio, passengers, etc.
44 - Change the FARS to require more instrument time for the rating
45 - Educate controllers on the major problems of SPIFR flight

46 - Need FARS to limit SPIFR
47 - Need more DME
48 - SPIFR can be safer than a poorly coordinated two pilot crew
49 - Pilots need better training on how the system works
50 - Need more FSS specialists

51 - The system is becoming too congested
52 - Single engine aircraft need a second electrical source for IFR flight
53 - The present ATC system is good and needs no changes
54 - The FAA must crack down on non instrument rated pilots filing IFR
55 - The system needs better, more experienced flight instructors

56 - SPIFR should not be flown without two engines
57 - A good flight simulator would help keep the cost of staying current down
58 - An ATP should not be issued to anyone under 3000 hours
59 - A pilot should not drink within 24 hours of his flight, change the FARS from 8 to 24 hours
60 - Always be looking for VFR traffic

TABLE B39 - CONCLUDED

61 - Transition from IFR to VFR
62 - A pilot must have good judgement
63 - Redesign the instrument panel
64 - Rental aircraft for SPIFR are dangerous
65 - Weather minimums shall be higher

66 - Expand the PBS AM weather program
67 - Ground schools cover too much material in too little time
68 - The present system of certificating aircraft for single vs. two pilot operations needs to be redesigned
69 - Plan ahead and stay ahead of the airplane
70 - The pilot should know the FARS

71 - Vertigo/spatial disorientation most difficult factor to deal with in SPIFR
72 - Put everyone everywhere under positive control

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15 Supplementary Notes

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16 Abstract

This document represents the statistical summary report on a mail questionnaire survey designed to develop information on the general aviation single pilot operating under instrument flight rules (GA SPIFR). The purpose of this statistical summary report is to present the questionnaire data in a convenient form so that it can be reviewed and analyzed with the objective of identifying research which could lead to the elimination or reduction of the severity of specific problems experienced by the GA SPIFR. A separate final report will be published.

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