B. Statistical Methods

1. Describe the potential respondent universe.

- The universe of potential respondents is listed in the table below. Student and recreational pilots are not included in the population of interest for this survey.

	Medical Certificate Class Applied For*		
Pilot Certificate Level	1st Class	2nd Class	3rd Class
Airline Transport Pilot	93,440	15,603	5,591
Commercial Pilot	7,484	27,732	17,236
Private Pilot	1,763	6,736	99,123
Total	102,687	50,071	121,950

**Based on estimates from 2016 administration*

- Previous administration of this survey indicated a response rate of approximately 35%
- The table below outlines the number of surveys that need to be distributed to each of the nine groups using a 95% confidence level, ±3% margin of error.
- A total of 2,323 surveys will need to be received from all groups combined.

	Medical Certificate Class Applied For*		
Pilot Certificate Level	1st Class	2nd Class	3rd Class
Airline Transport Pilot	266	262	255
Commercial Pilot	258	264	263
Private Pilot	232	257	266
Total	756	783	784

**Based on estimates from 2016 administration*

- The total number of medical certificates applied for in each class from the table above were used to determine how many surveys would need to be distributed in order to accurately reflect the population of each class of medical certificate applied for and each pilot certificate level.
- The table below outlines the number of surveys that need to be distributed to each of the nine groups using a 95% confidence level, ±3% margin of error, and assuming a 35% response rate.
- A total sample of 6,637 will be used.

	Medical Certificate Class Applied For

Pilot Certificate Level	1st Class	2nd Class	3rd Class
Airline Transport Pilot	760	749	729
Commercial Pilot	737	754	751
Private Pilot	663	734	760
Total	2160	0	2240

**Based on estimates from 2016 administration*

2. Describe the procedures for the collection of information.

Statistical methodology for stratification and sample selection: A random stratified sampling strategy will be used in this information collection. The stratification variables will be class of medical certificate applied for by the airman (class 1, 2, or 3) and the pilot certificate level (Air Transport Pilot, Commercial Pilot, or Private Pilot) as reported in the Airman Medical Certification System (AMCS).

Stratification by pilot certificate will be based on the highest level of pilot certificate held by the pilot at the time of application for a medical certificate. Stratification by medical certificate will be based on the class of certificate for which the airman applied.

Estimation procedure: The estimated sample size was developed based on the population of each cell. Sample estimates were developed to achieve a 95% confidence level and ±3% margin of error.

Degree of accuracy needed: A margin of error of ±3% will meet the requirements of this project.

Unusual problems requiring specialized sampling procedures: None

Any use of periodic (less than annual) data collection cycles to reduce burden: To reduce burden, the survey will be conducted in the year OMB approval is given and then again two years later.

3. Describe methods to maximize response rates.

Methods to maximize response rates:

- The notification/invitation package will include a cover letter worded to engage the pilots' interest, the reasons for the survey, and the benefits that they will receive from participating.
- The survey will be made available in an online and paper version.
- Email reminders (n=4) and a final reminder letter with a paper version of the survey will be sent to all pilots who have not completed the survey.

Methods to assess generalizability:

- Non-response analyses will be conducted using demographic data available in the AMCS system, including: certificate applied for, status of application, type of pilot certificate, age, gender, geographical region.
- If survey respondents differ significantly from the population, weighted sample procedures will be used to mitigate the bias.
- Characteristics of online respondents will be compared to the characteristics of the population and participants who completed the printed version of the survey to determine if there is any difference in responses by format.
- If there are differences, weighted sample procedures will be employed to mitigate the bias in subsequent analyses.

4. Describe tests of procedures and methods to be undertaken.

No beta testing will be conducted as the survey has been administered before.

5. Provide the names of consultants and the person who will collect and analyze the information.

The survey development and analysis will be conducted under the direction of Jamie Barrett, a Research Psychologist employed by the FAA at the Civil Aerospace Medical Institute, Oklahoma City (405) 954-1199 (jamie.barrett@faa.gov).

The survey will be distributed and the data will be collected by a survey contractor, Cherokee CRC, LLC. The point of contact for data collection will be Janine King (Janine.ctr.king@faa.gov).