

OMB 83-I Supporting Statement

2009 National Flight Attendant Duty/Rest/Fatigue Survey

B. Statistical Methods

1. Describe the potential respondent universe.

The total respondent universe consists of all flight attendants:

- Currently employed as an active flight attendant for a U.S. air carrier (i.e., not furloughed)
- Worked for more than 1 month with current airline

Since the number of flight attendants employed by U.S. air carriers varies by month, we can only estimate the number of flight attendants that will be employed at the time of distribution with the 2006 and 2004 Bureau of Transportation Statistics records. Using these numbers as a baseline, we are estimating the population of respondents will equal approximately 100,000 flight attendants from approximately 26 different air carriers.

The flight attendant lists are being requested from both the airlines and the unions. A comparison of the number of flight attendants on the roster lists with the number of flight attendants reported by the Bureau of Transportation Statistic indicates that more than 95% of the population is accounted for. Given that BTS reports are updated biennially, it appears that the rosters provided are valid.

FAA researchers will maintain the list of flight attendants. The lists of flight attendants provided by both the unions and airlines include personally identifiable information and are subject to The Privacy Act of 1974. The privacy information will be maintained by FAA researchers involved with the project and will be stored in a secured environment. Once sampling from the flight attendant lists is finalized, the lists will not be retained.

2. Describe the procedures for the collection of information.

A random stratified sampling strategy will be used in this information collection. The stratification variables will be made by air carrier (e.g., Delta, Continental, JetBlue). Given the number of air carriers operating in 2006 and 2004, it is estimated that sampling will be made from approximately 26 different air carriers. The number of flight attendants sampled from each air carrier will be dependent on the number of flight attendants employed by each air carrier.

Estimation procedure: Response rates to recent FAA surveys of pilots ranged from about 30% to 35%. Given the interest of flight attendants in the proposed survey and the efforts made to maximize response rates, the response rate of 40% was selected as the best estimate for this project.

Degree of accuracy needed: Accuracy in survey analysis is commonly defined as the standard error of the proportion responding positively or negatively to an item, commonly in the 3 to 5% range. The degree of accuracy needed for this survey is $\pm 3\%$ with a 95% confidence interval. The number of usable returns required to achieve that accuracy is 12,000 surveys overall – the number of returns expected using a 40% return rate.

The stratified sampling strategy was developed to achieve an accuracy level of +/- 3%. The sample is being strategically sampled from each of the approximately 26 U.S. airlines. Due

to political constraints the reports will not be made by airline. Rather, reports will be made in terms of type of air carrier (low-cost, regional, network), flight attendant seniority (bottom 1/3, middle 1/3, top 1/3), and type of schedule (international, domestic, combo). The overall sampling strategy should provide a dataset that will achieve an accuracy level of at least +/- 3%.

3. Describe methods to maximize response rates.

The data collection will be conducted from September 2008 through February 2009. Notification postcards will be mailed to the sample of flight attendants representing each airline from late September to early October. One week after notification, the questionnaire package will be mailed to the flight attendant's home address. The questionnaire package will include an invitation letter that will explain the importance of their feedback. The flight attendant will be assured that the survey is completely anonymous and voluntary.

To improve response rates, the questionnaire package will include a postage-paid return envelope and information regarding a website link for online responses. Three weeks and five weeks after the questionnaire mail out, a reminder postcard will be sent to every flight attendant.

Due to the political constraints on this study, it is not possible to obtain additional demographic information that can be linked to survey responses. This limitation hinders a typical study of non-responders.

To circumvent this issue, we have contacted the U.S. Census Bureau and Bureau of Labor Statistics to identify the type of demographic information that is available regarding the flight attendant population. Using this information, we may include demographic items on the survey that address key issues expected to impact response rates. For example, on the survey we might ask a respondent to describe their educational achievement (high school or less, bachelor's degree or higher, some college). Using this information, we will then compare it to the census data to evaluate the extent to which the survey responses approximate the population. In this instance, we know that 25% of flight attendants have achieved high school or less, 31% have achieved a bachelor's degree, and 44% have achieved some college. Using the population information available from the Census Bureau, we can then evaluate the representativeness of the survey and identify potential non-response biases.

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

All instruments were reviewed by a group of experienced FAA researchers and AFS personnel for clarity of instructions and technical details. In addition, pilot testing was conducted with SMEs and airline management to evaluate the quality of the survey. Feedback from all vested parties was discussed, incorporated, and reviewed again to develop the proposed survey.

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

The information will be collected and analyzed by Katrina Avers, Ph.D., CAMI, (405) 954-1199; Dan Jack, Xyant Technology, (405) 954-6836; Janine King, Xyant Technology, (405) 954-6837.