

## **Section B. Collection of Information Employing Statistical Methods**

- 1. Respondent Populations and Sampling Method:** Data will be collected from varied respondents who have access to the Nation's runways; e.g., pilots, aircraft support vehicle drivers, airport/airfield maintenance staff, management, and other personnel engaged in the operations of aircraft or airports, etc. Therefore, the sample population will be stratified into five general areas: pilots, mechanics, vehicle drivers, pedestrians, and management who exercise oversight of the subject populations. Within these groups, the samples may be further stratified, depending on the nature of the survey. For example, there are over 650,000 pilots in the National Airspace System with a current medical certificate. There are educational materials that will be sent to all pilots with a current medical certificate. A sample of these pilots (to be used to obtain feedback on educational materials) would be divided into general aviation pilots, air transport pilots, and certified flight instructors. Individuals would be randomly selected within these groups with a target number of responses of 1,000 per group. In some cases, individuals would be sampled from a specified target audience, e.g., people who drive vehicles at airports with an unusually high or low number of runway incursions per year. In these cases, the sample size will vary with the size of the population. Audience sampling can be accomplished with wireless devices that provide instantaneous data anonymously and precisely.
- 2. Procedures for Data Collection:** Methods will include the use of electronic feedback, mail, and person-to-person interviews.

Electronic data collection will primarily be associated with distribution of runway safety material intended to help reduce runway collision risk on the Nation's runways. It is anticipated that this feedback will help improve the effectiveness and utility of future runway safety material. Electronic feedback surveys will be voluntary and designed to take the respondents no more than five to ten minutes to complete. It is important to note that the option to mail in feedback surveys will be available for those respondents who choose not to respond online or who do not have the technology required. Electronic\Web-based data collection will also be used during operational evaluation of technologies such as Electronic Flight Bags.

Person-to-person interviews are planned for public events, such as air shows, aviation industry conventions, and safety seminars. Audience Response Technology may also be used to record answers to questions during the course of a presentation or training class. These responses will take ten to fifteen seconds each and will number no more than 25 per one hour of presentation, and will be designed to gain feedback about the presentation or class or safety material handed out at an event booth, or to advise FAA of the level of runway safety knowledge held by the people who operate in the NAS. An alternate use of interviews will be to receive feedback on specific performance analysis projects; e.g., assess the impact of changing paint markings on or near the runway edge

lines to increase pilots' awareness of their location on the airport relative to the runway surfaces.

3. **Methods for Maximizing Response Rates:** Interviewers will be trained on how to approach respondents and how to conduct the actual interview to receive standardized, non-biased data. Written and on-line surveys will be accompanied by an introductory letter from the Director of the Office of Runway Safety explaining the purpose of the survey, the importance of the respondents' input, and how the results of the survey will be used. Since it is important for the respondents to have assurances of anonymity, follow-up mailings or telephone calls are ill advised and would not be used. All written and on-line surveys will be short (no more than one page front and back), and easy to fill out with multiple-choice answers (e.g., opinion questions with a Likert-scale response).
4. **Tests for Procedures or Methods:** Pre-screening of survey questionnaires and interview questions will be conducted to discover and correct any inconsistencies. Improvements in content, flow, and dependability will be made, if necessary. Each type of survey will be voluntary, anonymous, short, and will impose a low level of burden on the respondent. While the sample population is limited to voluntary respondents, the results will be analyzed with respect to any demographic variables that could be expected to affect the responses; e.g., experience level, aircraft rating, geographical location, or training received, etc.
5. **Names of Individuals Involved in the Design, Data Collection and Analysis of the Survey:** Dr. Pradip Som, Ph.D., 202-385-4842, Mr. Greg Won, 202-385-4792, Dr. Kim Cardosi, Ph.D., (617-494-2696), Dr. Dan Hannon, Ph.D., (617-494-2198), and Suzanne Chen, statistician, of The Volpe Center, will serve as consultants in the design and development of the surveys, and in the analysis of the collected results. In addition, Michael McNulty at the FAA Technical Center in Atlantic City, New Jersey, will serve as an additional resource for this work.