

SUPPLEMENTAL INFORMATION TO ACCOMPANY OMB APPLICATION FOR NEW DATA COLLECTION

1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection methods to be used. Data on the number of entities (e.g., establishments, State and local government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

The respondent universe consists of adult members of households in the 48 contiguous United States. Interviews will be sought with one adult member of each residential household selected from an RDD sampling frame (see below). After test mission flight tracks have been planned in a subsequent research effort, mission-specific sampling frames will be compiled for geographic areas extending approximately 15 to 20 miles orthogonal (on both sides) of the supersonic X-plane's flight track.

Since the initial sample is intended to be nationally representative, however, it will include all of the 48 states and ~3,000 counties in the contiguous United States. Live agent telephone interviewing is expected to yield a response rate of approximately 20% – 25%, while automated telephone interviewing is expected to yield a response rate no greater than 5%.

No such prior data collection has been conducted of the annoyance of low amplitude sonic booms.

2. Describe the procedures for the collection of information including statistical methodology for stratification and sample selection, estimation procedure, degree of accuracy needed for the purpose described in the justification, unusual problems requiring specialized sampling procedures, and any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Of the roughly 123,000,000 American households, all but about 4,000,000 (~ 3%) subscribe to some form of telephone service (Blumberg and Luke, 2016). An EPSEM (Equal Probability Selection of Elements) RDD (Random Digit Dialed) sampling frame (de Leeuw, *et al.*, 2008) will be generated from telephone working blocks (NPA¹-NXX-XX) in the 48 contiguous states. The sampling frame will be compiled from the set of telephone working blocks of all states other than Hawaii and Alaska. Unbiased coverage of all telephone-subscribing households is accomplished by assigning equal probabilities of selection to each telephone working block. Each telephone number included in the sample will thus have the same probability of selection as well. Since the number of possible telephone numbers (and working blocks) is proportional to population concentrations within the intended geographic

¹ NPA is an abbreviation for Numbering Plan Area, commonly referred to as a telephone area code.

area, the resulting sample is not only highly representative, but self-stratifying. In other words, the proportions of households nationwide sharing common demographic properties will be fully reflected in a large, national-level EPSEM RDD sample.

3. Describe methods to maximize response rates and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling, a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.

Multiple callbacks are the usual measure for minimizing non-response rates that are due to failures to contact individuals eligible for interview. For purposes of interviewing people about their prompt reactions to low amplitude sonic booms, information about delayed responses to noise exposure are of secondary interest. The large number of intended interview attempts is the only practical method for obtaining large enough numbers of completed interviews to reliably discriminate the effect of interviewing method on interview completion rates. Potential issues of the degree to which respondents who are successfully contacted and grant interviews are representative of the national population of interest will be addressed by secondary analyses of regional differences in interview completion rates.

4. Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of test may be submitted for approval separately or in combination with the main collection of information.

The proposed study corresponds closely with the pre-tested, minimized public burden that OMB encourages. The results of the proposed tests of interview completion rates are intended to inform subsequent sampling and interviewing procedures that will be used to evaluate community response to actual exposure to low-amplitude sonic booms produced by flight operations by NASA's low boom flight demonstrator aircraft.

5. Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.

Names and telephone numbers of individuals consulted on statistical aspects of the design:

Dr. Sanford Fidell (Fidell Associates, Inc.: 818-884-6775)

Dr. Fidell has conducted laboratory and field (including multiple social survey) studies of individual and community response to transportation noise exposure for nearly 50 years.

Dr. Barbara Tabachnick (818-346-8012)

Dr. Tabachnick has provided statistical consulting services for 45 years to a diverse international clientele engaged in health-related, educational technology, and social science research. She is the senior author of a widely-known and well-received graduate textbook on multivariate statistical analysis methods ("Using Multivariate Statistics",

Pearson), now in its sixth edition.

Mr. Steven Clark (Scientific Telephone Samples, Inc.: 949-461-5400)

Mr. Clark founded Scientific Telephone Samples (STS), a leading provider of sampling services for the marketing research and public opinion polling industry, in 1988.

Identity of parties who will collect and/or analyze information for NASA:

Fidell Associates, Inc. (Dr. Sanford Fidell, 818-884-6775)

RDH Acoustics (Mr. Richard Horonjeff, 603-784-5678)

Interviewing Service of America (Mr. John Fitzpatrick, 818-989-1044)

Landrum and Brown, Inc. (Mr. Vincent Mestre, 949-349-0671)

Scientific Telephone Samples, Inc. (Mr. Steven Clark, 949-461-5400)

Dr. Barbara Tabachnick (818-346-8012)

REFERENCES:

Blumberg S.J., Luke J.V. Wireless substitution: Early release of estimates from the National Health Interview Survey, July–December 2016. National Center for Health Statistics. May 2017.

de Leeuw, E.D., Hox, J.J., and Dillman, D.A. (2008). International Handbook of Survey Methodology. Taylor and Francis, New York.