

Human Subject Research Volunteer Informed Consent

Title of Research: Future Aircraft Sound Study

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Funding source: NASA's Aeronautics Research Mission Directorate

Federal regulations require researchers to obtain signed (electronic acknowledgment) consent for participation in research involving human subjects. After reading the information, if you wish to consent to participating in this survey, please indicate so by electronically acknowledging this Informed Consent when you begin the online test application.

I. Statement of Procedure:

In this online survey/test, you will be asked to listen to various audio files played through your computer audio equipment. Your participation is voluntary, and you may stop at any time. Your identity will be kept private, and your responses will be combined with other responses for analysis. If you agree to participate, please select "Yes – I want to participate" in the Consent Request and Privacy Notice window that will appear soon after you sign into the test application. If you decline to participate, you may select "No – I do not want to participate." After signing into the test application, if you decide that you would like to complete this survey later, please sign in again by the survey deadline to complete it. Thank you for your interest.

II. Key Information

This study involves listening to the sound of novel aircraft that are projected to be introduced into communities to help with the next generation of air transportation. You will be asked to listen to 30-45 minutes of a sequence of sounds of future aircraft flying overhead, landing, or taking off. You can start the test at your convenience, but we need you to complete the study within 4 weeks of beginning the test.

Each sound that you hear will last 20-30 seconds. After each sound, you are asked to make an "annoyance rating" on a 0-10 scale. You'll need to have a computer with a reliable internet connection, audio equipment, and a quiet location where you can take the test. It is preferred that your audio equipment be over-the-ear headphones. Prior to the main test session, you will watch an introduction video, perform a manual calibration of your computer volume setting, familiarize yourself with the types of sounds you will encounter in the test, watch a brief training video, and practice responding to test sounds. After the study is completed, you'll be asked to provide numerical ratings to some questions about your sensitivity to aircraft sounds.

III. Statement of Purpose

NASA has an ongoing effort to assess how persons and communities respond to innovations in aircraft design. This will help NASA develop tools and perception models that account for human response to noise in future aircraft design.

IV. Study Procedures

- This is a research experiment. There will be approximately 350-400 individuals participating in this study.
- This study will be performed online in various locations, but primarily in the New York, Dallas-Fort Worth, and Los Angeles urban and suburban communities.
- You will receive a training briefing on the listening test and be provided contact information if you have any questions or concerns prior to starting the study.
- If you consent to participate in the research, you will be asked to listen to 50-60 sounds, each lasting 20 to 30 seconds. After hearing each sound example, you will make a rating using the computer interface by rating your perceived annoyance of the sound on a 0-10 scale.
- The duration of your participation will be 45-60 minutes
- Your individual data will not be disclosed to you. NASA will publish reports describing the overall results of the research at an undetermined time in the future.
- You may contact the experiment proctor (Floor23) if you have any questions regarding this experiment before, during, or after my participation.

V. Potential Benefits

- **Personal Benefits:** There are no personal benefits given by this study.
- **General Benefits:** Overall, the research will contribute to knowledge of community response and help in the design of future aircraft. Specific benefits to society and others will be the application of data results to acoustical engineering of aircraft to minimize annoyance in communities in general.

VI. Compensation

There are no costs associated with participating in this study. You will be compensated with a \$25 gift card for completing the study.

VII. Potential Risks

****Failure to disclose pre-existing medical conditions may place you at greater risk for injury or other adverse events resulting from your participation in this study.****

There are no risks anticipated with the study. You are free to withdraw from the research at any time and for any private reason. This study has been determined to be “minimal risk.” Based on prior experience, the only inconvenience possible in such tests is momentary boredom. The sounds are no louder than what you would encounter in daily life.

If you have questions about the research and your rights should you experience any injury, you may contact Floor 23 at:

- Floor23 Phone: 1 262 342 6521
- Floor23 Email: hello@floor23digital.com

You may also contact the principal investigators listed at the beginning of this document if you have questions about the research and your rights should you experience any injury.

You may express a concern about this study by contacting the NASA Institutional Review Board (IRB) listed below:

Office of Research Assurance: Research Integrity & Protection of Human Subjects
2101 NASA Parkway
Mail Code SA
Houston, Texas 77058
Visit: <https://irb.nasa.gov/?p=irbContactInfo>

VIII. Data Protection

Research records, including the consent to taking the test, may be used for research and regulatory purposes by NASA.

Every effort will be made to ensure protection of your study records. There are many reasons why information about you may be used or seen by the researchers or others during or after this study. Examples include:

- NASA and other government officials may need the information to make sure that the study is done in a safe and proper manner. These agencies may include the Department of Health and Human Services (DHHS), the Food and Drug Administration (FDA), the National Institutes of Health (NIH), and/or the Office for Human Research Protections (OHRP) or other domestic or foreign government bodies if required by law and/or necessary for oversight purposes.
- Your privacy of data collected as a part of this research study will be protected from unauthorized disclosure according to applicable federal law. Your name, email address, and country of citizenship will be used to create a NASA Launchpad Guest account for you to sign into the online test application. After signing in, the test application will use your email address and an alphanumeric code to assign and track your survey/test responses. Other than your United States Postal ZIP Code and email address, all other personal information will be disassociated from your survey/test responses during the test.

After the test is completed, your email address will be deleted from the test application, and the email address will be dissociated from your survey/test responses. Your assigned alphanumeric code, which is designed to maintain your anonymity, will be used on all other paper or computer documents to keep track of survey/test results.

- The identity of individual participants will remain anonymous. All stated precautions will be taken to protect participant anonymity, but there is a small risk that some or all of the participant's data could become identifiable. The data will only be accessed by the principal investigator, and that data will only be stored on computers and storage devices subject to NASA Information Technology security rules.
- Your NASA Launchpad Guest account will automatically expire within one year. The data files that recorded the survey/test responses that you provide during your participation in this research activity may be shared with other researchers within NASA (and outside NASA, if applicable) but only the subject number assigned by the experimenter will identify these files. The data files recorded during your data collection session and information you provide during your participation will be shared, without disclosing your identity.
- Only your alphanumeric code, survey/test responses, and United States Postal ZIP Code may be distributed for future analyses of the survey/test results. All of your other information collected as part of the research, even if identifiers are removed, will not be used or distributed for future research studies.

IX. Voluntary Participation

Taking part in this study is voluntary. You may withdraw from participating or be asked to withdraw from participating at any time. A decision to not participate or to withdraw from participation at any time will result in not being paid the \$25 gift card, but will not result in any other penalty or loss of benefits to which you may otherwise be entitled.

If you decide not to join the study, you may be eligible to participate in other studies.

The investigator may terminate your participation in the research for the following reasons:

- Failure to satisfy certain eligibility criteria, including passing any applicable screening tests or procedures
- The researcher believes that it is not in your best interest to stay in the study
- There is a problem with following any instructions or procedures
- Inappropriate behavior
- The study is suspended, canceled, or completed earlier than anticipated

X. Safety

As a voluntary test subject participating in this research:

- You should report any accident, injury, illness, and changes in your health condition, hazards, safety concerns, or health concerns to Siddhartha Krishnamurthy/1 757 864 7656. If you are unable to reach the above-named individual(s) or are not satisfied with the response you receive, you should contact the NASA Institutional Review Board at (281) 549-9334.
- If you detect any unsafe condition that presents an imminent danger to you, or others, you have the right and authority to stop the activity or test. In such cases the Principal Investigator and associated research personnel will comply with your direction, stop the activity, and take action to address the imminent danger.

XI. Statement of Consent (Will be displayed to participant within the online test application in a pop-up window labeled “Consent Request and Privacy Notice.” Statement of Consent being given here for IRB approval only. All previous sections will be electronically sent to participant before they enter the online test application):

- I have been provided a copy of the Human Subject Research Volunteer Informed Consent form for the Future Aircraft Sound Study and understand the explanation of procedures, benefits, and risks associated with the research herein, and I agree to participate in the research described herein. My participation is given voluntarily and without coercion or undue influence, and I also voluntarily consent to sharing my information, including the data files recorded during my data collection session, as long as my identity is not disclosed. I understand that I may discontinue participation at any time.
- I have been provided a copy of the “Privacy Act Notice: Collection of information to determine eligibility to participate in research as a subject volunteer” (meeting the requirements outlined in 14 CF 1212.602).
- Paperwork Reduction Act Statement: This information collection meets the requirements of 44 U.S.C § 3507 as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is TBD and this information collection expires on TBD. We estimated that it will take about 1 hour to read the instructions, gather the facts, and answer the questions. You may send comments on our time estimate above to LaRC-NasaSoundStudy@mail.nasa.gov.
- If you accept the above statements and agree to participate, please click “Yes – I want to participate” below. If you decline to participate, please check the “No- I do not want to participate” response below, and if you would like to complete this survey later, log in by the survey deadline to complete it. Thank you for your interest.

(ONLINE VERIFICATION OF CONSENT BY CLICKING “YES – I WANT TO PARTICIPATE”)