NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[NASA Document Number: 25-010]

Agency Information Collection: Remotely Administered Psychoacoustic Test for Advanced Air Mobility Noise Human Response

AGENCY: National Aeronautics and Space Administration (NASA).

ACTION: Notice of new information collection.

SUMMARY: NASA, as part of its continuing effort to reduce paperwork and respondent burden, under the Paperwork Reduction Act, invites the general public and other Federal agencies to take this opportunity to comment on proposed and/or continuing information collections.

DATES: Comments are due by **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Written comments and recommendations for this information collection should be sent within 30 days of publication of this notice to www.reginfo.gov/public/do/PRAMain. Find this particular information collection by selecting “Currently under 30-day Review-Open for Public Comments” or by using the search function.

FOR FURTHER INFORMATION CONTACT: Requests for additional information or copies of the information collection instrument(s) and instructions should be directed to NASA PRA Clearance Officer, Stayce Hoult, NASA Headquarters, 300 E Street SW, JC0000, Washington, DC 20546, phone 256-714-8575, or email stayce.d.hoult@nasa.gov or hq-ocio-pra-program@mail.nasa.gov.

SUPPLEMENTARY INFORMATION:

I. Abstract

This information collection is for conducting a sound response laboratory test, which is called a psychoacoustic test, to better understand human noise response to passenger and equivalent

cargo carrying Advanced Air Mobility (AAM) aircraft. These AAM aircraft are expected to takeoff and land in closer proximity to communities than conventional aircraft. The aircraft are being designed to use multiple electrically driven rotors. Different AAM aircraft are unique in their design and geometric placement of rotors around the aircraft. The unique propulsion systems of AAM aircraft means that the sounds they produce will also be unique compared to conventional aircraft. Yet, insufficient data exists on how humans will respond to AAM aircraft noise. The National Aeronautics and Space Administration (NASA) seeks to gather data on the human noise response to AAM aircraft through the Varied AAM Noise and Geographic Area Response Difference (VANGARD) laboratory test. The VANGARD test will play recorded and electroacoustically reproduced sounds of different single AAM aircraft flyovers to test participants and ask for their annoyance response to each sound. The VANGARD test is one of many initial psychoacoustic tests being planned to gather data for research purposes on AAM vehicle noise response. VANGARD test objectives are not designed to affect existing or proposed aircraft operations, and its objectives are not designed to affect noise policy. One aspect of the VANGARD test that is different from many other psychoacoustic tests on AAM vehicle noise is that it will be conducted using an online test application and gather human response data from geographically diverse participants. By addressing insufficient data on AAM aircraft noise response, VANGARD test results will allow subsequent studies on human noise response to AAM aircraft to be more informed in their design and test objectives. The VANGARD test seeks to answer the following research questions that will serve as a foundation for further investigations with laboratory and community testing of AAM/UAM noise human response:

1. Do annoyance responses differ between respondents who reside in low versus high ambient noise environments? Here, “low” and “high” ambient environments are determined from the A-weighted L50 data produced by the National Park Service for different United States Postal ZIP Codes.

2. Do annoyance responses differ as a function of the phase of flight? Here, the phases of flight are the landing, takeoff, and cruise phases.
3. Do annoyance responses differ as a function of distance from take-off and landing operations?
4. Is there a correlation between annoyance ratings and objective parameter analyses of the data? Examples of objective parameters include, but are not limited to, sound quality metrics, spectra, sound exposure level, and amplitude envelope shaping.
5. Is there a correlation between annoyance ratings and noise sensitivity, measured from subject questionnaire data?

Authority: The National Aeronautics and Space Administration (NASA) is committed to effectively performing the Agency's communication function in accordance with the Space Act section 203 (a)(3) to "provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof," and to enhance public understanding of, and participation in, the nation's aeronautical and space program in accordance with the NASA Strategic Plan.

Through Public Law 93-579 (Privacy Act of 1974), the authority to collect the information requested from test participants through informed consent associated with the study is derived from one or more of the following: title 14, Code of Federal Regulations, §§ 1212 and 1230; title 51, United States Code, section 20113, as amended.

The VANGARD test was approved by the NASA Institutional Review Board with Study eIRB Number STUDY00000862 and FWA Number 00019876.

II. Methods of Collection

Test subjects will electronically indicate their annoyance rating to test AAM/UAM aircraft noise stimuli into an interface displayed on their own computers.

III. Data

Title: Varied Advanced air mobility Noise and Geographic Area Response Difference Test.

OMB Number: 2700-new.

Type of review: New collection.

Affected Public: Individuals and households.

Estimated Annual Number of Activities: 400.

Estimated Number of Respondents per Activity: 1.

Annual Responses: 400.

Estimated Time Per Response: 1 hour.

Estimated Total Annual Burden Hours: 400 hours.

IV. Request for Comments

Comments are invited on: 1) Whether the proposed collection of information is necessary for the proper performance of the functions of NASA, including whether the information collected has practical utility; 2) the accuracy of NASA's estimate of the burden (including hours and cost) of the proposed collection of information; 3) ways to enhance the quality, utility, and clarity of the information to be collected; and 4) ways to minimize the burden of the collection of information on respondents, including automated collection techniques or the use of other forms of information technology.

Comments submitted in response to this notice will be summarized and included in the request for OMB approval of this information collection. They will also become a matter of public record.

Stayce Hoult,

PRA Clearance Officer,

National Aeronautics and Space Administration.

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