Aircraft Sound Monitoring Study: Approach and Way Ahead

Department of the Navy
Meeting Agenda

- Welcome and Opening Remarks
- Project Overview
  - Monitoring Study Overview
  - Monitoring Study Goals
- Monitoring Approach
  - Technical Requirements
  - Sound Level Meter Site Selection & Maps
- Next Steps / Way Ahead
- Discussion & Questions
Sec. 325. Real-Time Sound-Monitoring at Navy Installations where Tactical Fighter Aircraft Operate

(a) MONITORING—The Secretary of the Navy shall conduct real-time sound-monitoring at no fewer than two Navy installations and their associated outlying landing fields on the west coast of the United States where Navy combat coded F/A–18, E/A–18G, or F–35 aircraft are based and operate and noise contours have been developed through noise modeling. Sound monitoring under such study shall be conducted—

(1) during times of high, medium, and low activity over the course of a 12-month period; and

(2) along and in the vicinity of flight paths used to approach and depart the selected installations and their outlying landing fields.

(b) PLAN FOR ADDITIONAL MONITORING—Not later than 90 days after the date of the enactment of this Act, the Secretary of the Navy shall submit to the congressional defense committees a plan for real-time sound monitoring described in subsection (a) in the vicinity of training areas predominantly overflown by tactical fighter aircraft from the selected installations and outlying landing fields, including training areas that consist of real property administered by the Federal Government (including Department of Defense, Department of Interior, and Department of Agriculture), State and Local governments, and privately owned land with the permission of the owner.
Sec. 325. Real-Time Sound-Monitoring at Navy Installations where Tactical Fighter Aircraft Operate (Continued)

(c) REPORT REQUIRED—Not later than December 1, 2020, the Secretary of the Navy shall submit to the congressional defense committees a report on the monitoring required under subsection (a). Such report shall include—
(1) the results of such monitoring;
(2) a comparison of such monitoring and the noise contours previously developed with the analysis and modeling methods previously used;
(3) an overview of any changes to the analysis and modeling process that have been made or are being considered as a result of the findings of such monitoring; and
(4) any other matters that the Secretary determines appropriate.

(d) PUBLIC AVAILABILITY OF MONITORING RESULTS—The Secretary shall make the results of the monitoring required under subsection (a) publicly available on a website of the Department of Defense.

The Aircraft Sound Monitoring Plan was provided to Congress on schedule; monitoring actions and report schedules are likely to be delayed by coronavirus travel restrictions
Monitoring Study Overview

- Two Navy Installations on the West Coast
  - Naval Air Station (NAS) Whidbey Island (Washington)
  - NAS Lemoore (California)
- Real-Time Sound Monitoring
  - Over the course of a 12-month period
  - Capture times with high, medium, and low aircraft activity
  - Measure sound in the vicinity of aircraft flight paths, outlying landing fields (OLFs), and training areas
Monitoring Study Goals

• Study Goals
  – Document monitored sound levels
  – Compare monitored sound levels with noise models
  – Recommend improvements to noise modeling process and tools (if applicable)
  – Share results with the public
Monitoring Approach: Airfields

• Regular Operational Tempos around Airfields Require:
  – Temporal sampling
    • Four (4) seven-day (continuous) sampling periods
    • One sampling period for each season at each location
    • One optional sampling period (5th), if required
  – Spatially distributed locations
    • Up to 12 sites per installation
    • Utilize existing modeled scenarios for site selection
Sporadic Operational Tempos in ONP require:

- Temporal sampling
  - 365-day (continuous) sampling period
  - Coordinated observer periods
- One location located in suitable area with most aircraft overflight at lower altitudes

As with Airfield Measurements, following guidance outlined in ANSI S12.9 Part 2 to measure aircraft sound
Monitoring Locations – Site Selection Parameters

- **Sound Level Meter Selection Criteria**
  - Locations based on prior noise modeling
  - Sound Level Meter placement should capture a distribution of modeled DNL sound levels from aircraft operations:
    - 50 to 60 dBA DNL
    - 60 to 75 dBA DNL
    - >75 dBA DNL
  - The preferred location for most SLMs is within modeled 60 to 75 dBA DNL areas
Monitoring Locations – Site Selection Parameters

- Flight Operations Basis
  - Spatially distributed locations of Sound Level Meters (SLM) to capture a range of typical flight types and maneuvers
    - Arrivals
    - Departures
    - Patterns
    - Inter-facility (to and from OLF Coupeville)
  - In the vicinity of primary flight path to offshore training areas
  - As close as possible to modeled flight track or overflight area
Monitoring Locations – Logistical Considerations

- Dominant sound source should be aircraft sound
- Reduce interference from other sound sources
  - Minimize background sounds / away from road traffic
  - Away from reflecting surfaces
  - Safe location to leave meters unattended
  - Accessibility
If interested in providing input on SLM locations

- Send suggested SLM locations to sound.monitoring@navy.mil
- Input can be dots on a map, address with notes, or GPS coordinates
- Focus on locations within the preferred noise contour bands
- Locate under different kinds of flight operations
- Consider suitable locations that are accessible and secure
- Input is optional
Way Ahead / Next Steps

- Sound expert uses stratification matrix to assess proposed Sound Level Meter locations
- Sound expert conduct logistics visit in July/August 2020 to select Sound Level Meter locations
- Initiate sound monitoring in Fall 2020
- Submit interim report to Congress in December 2020
- Continue sound monitoring in Winter, Spring, and Summer 2021*

*Schedules may shift based upon COVID-19 travel restrictions
Discussion / Questions