



Aircraft Noise

What is Noise?

The words 'noise' and 'sound' both relate to hearing and can be used interchangeably. The difference is we typically refer to 'sound' when discussing something pleasant such as music, and 'noise' when discussing something unpleasant. This "noise" can interrupt an activity, disturb the peace and quiet, interfere with communication, or disrupt sleep.

When is Noise Analyzed?

Noise analysis occurs when the Air Force proposes a change in aircraft type, and/or changes in when, where, and how aircraft fly. Changes in the Special Use Airspace needed to meet training requirements is one such driver. During the analysis process, various noise metrics are used to gauge the significance of changing airspace boundaries and usage. The results help Air Force leaders inform the public of potential noise impacts and assists in the decision-making process for proposed airspace changes.



What is a Sonic Boom?

A Sonic Boom is the sound associated with the shock waves created when an aircraft travels through the air faster than the speed of sound. Sonic booms create a significant amount of sound energy, sounding much like an explosion. The distance to the point on the ground where the boom is heard depends on the altitude, flight path, and size and shape of the aircraft.

How is Noise Modeled?

Computer Models. The Department of Defense uses the NOISEMAP suite of programs to predict noise for exposure from all flight activity and environmental analyses in the United States and its territories.

- ✓ NOISEMAP is used for predicting noise exposure in the airfield environment.
- ✓ Military Operating Area and Range Noise Model (MR_NMAP) is used for predicting noise exposure from aircraft operations in Special Use Airspace.
- ✓ PCBOOM4 is used to predict the sonic boom footprint of individual supersonic flight events that occur in Special Use Airspace.
- ✓ BOOMAP is used for analysis of the cumulative sonic boom environment for air combat maneuvering that includes supersonic flight.

Modeling Input Data. The computer models require several types of data including:

- ✓ Weather, terrain, and elevation data
- ✓ Engine power setting and aircraft speed
- ✓ Type, number and time of day for aircraft operations
- ✓ Duration of aircraft missions for each area
- ✓ Special Use Airspace in use and/or flight patterns
- ✓ Airspace altitude
- ✓ Number of supersonic events and altitudes

