

# Noise Management at Pax River Range Ensures Test & Evaluation Success

## Response System & Analysis Tools Among Effective Mitigation Measures

**A NUMBER OF** measures employed by the Sustainability Office (SO) at the Naval Air Station (NAS) Patuxent River, MD (Pax River) are effectively managing the noise issues related to base test and evaluation (T&E) operations.

The Naval Air Systems Command (NAVAIR) ranges operate major test ranges and facilities on the East and West Coasts of the United States for Naval aviation test, evaluation, experimentation and training. These large, unencroached tracts of land, sea and air space provide a variety of terrain, including desert, mountain, littoral and open-ocean. NAVAIR schedules and operates these interoperable air, land and sea ranges, range instrumentation and associated facilities; and provides air vehicle and weapons systems modification and instrumentation.

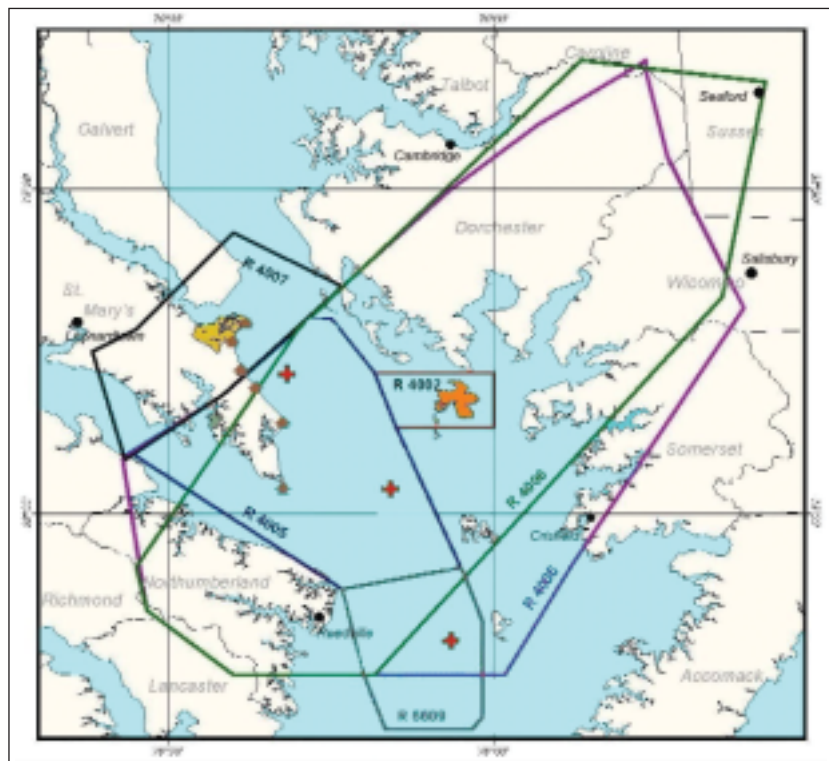
Range SOs—located at Patuxent River, MD, China Lake, CA, and Point Mugu, CA—work to ensure environmental compliance and manage encroachment on test and evaluation operations conducted at these three NAVAIR range sites. The mission of the SO is to “support fleet readiness by ensuring

access to ranges, facilities and resources as well as public support for the Navy’s test, training, evaluation and experimentation mission.”

At the Atlantic Test Ranges (ATR) located at Pax River, the SO mission includes an emphasis on main-

taining a quality noise management program.

The SO at Pax River is responsible for tracking noise disturbances in all of the airspace used by the ATRs. Range airspace includes parts of Maryland, Delaware and Virginia.



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Sonic boom monitors, like this one installed and calibrated at Pax River, are an important part of the base's initiative to limit noise disturbances.

According to Chris Jarboe, SO team lead at ATR, proactive involvement is ongoing in several core areas, including range management planning support, encroachment management, public outreach, comprehensive noise management, operational environmental planning, and information technology support.

“The SO performs a number of different services for the Naval Air Station, one of which is noise management. As the community around Pax River expands, noise management grows in importance. Noise management includes the monitoring, control and abatement of aircraft noise in the community surrounding our ranges,” Jarboe explains.

As part of the National Environmental Policy Act (NEPA), an Environmental Impact Statement (EIS) was developed for Pax River in 1998. During the public review and comment of the EIS, it was discovered that noise was the largest concern for the communities. To address this concern, five specific mitigation measures were proposed to reduce noise impacts and were documented in the Record of Decision (ROD), finalized in 1999. The Navy still adheres to these mitigation measures, which include the following.

1. **Establishing a Noise Disturbance Response System**

The SO developed a centralized process to ensure noise disturbance reports are received, investigated, responded to and recorded in a database. Noise distur-

bances can be received either through the Noise Disturbance Hotline or the web (at [paxnoise@navy.mil](mailto:paxnoise@navy.mil)). Once noise disturbance reports are received, they are immediately investigated by Pax River Air Operations. If the aircraft flying at the time of the complaint are found to be associated with Pax River operations, the aircrew is then notified that a complaint was filed. A follow-up response is provided to the complainant to provide information about the event and any related actions. Through this process, the most community-friendly flight plan is assured while still meeting the objectives of the Navy mission.

2. **Monitoring the Open Air Engine Test Cell (OAETC)**

Due to the location of the OAETC facility, on Pax River directly across from high-density housing, the SO found that engine noise has the potential to reach substantial levels (up to 110 decibels) in these communities. In response to these findings, operations are authorized only when wind direction and velocity avert the noise away from local communities, thereby significantly lowering noise impacts.

3. **Providing Awareness Briefs and Videos**

According to Jarboe, the aircrew awareness brief “informs squadrons and pilots of how their flight operations may affect the local communities and reiterates

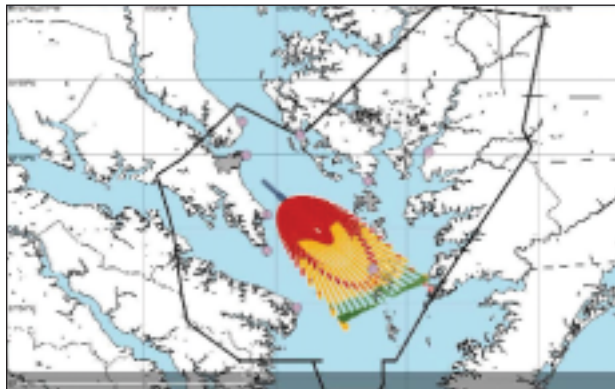
information provided in the Air Operations Manual.” In short, this brief and video remind squadrons to fly safely and to keep the communities under range airspace in mind.

#### 4. Expanding Flight Routes for Unmanned Aircraft Systems (UAS)

UAS engine sounds can closely mimic the noise of high-pitched lawnmower engines, and to mitigate this disturbance, their flight patterns have been altered and expanded. UAS flights were originally concentrated over the Northern Neck of Virginia, but were expanded to include a larger area over the Chesapeake Bay.

#### 5. Installing and Maintaining Sonic Boom Monitors

Nine sonic boom monitors have been installed at various locations around the Chesapeake Bay to provide quantitative data on sound pressure levels of sonic booms. These data can be used to validate the occurrence of sonic booms, allowing the SO to evaluate which communities are affected by supersonic events.



The SBPT is used before every scheduled sonic boom-capable flight operation.

### Pax River Noise Mitigation Measures

1. Establishing a Noise Disturbance Response System
2. Monitoring the Open Air Engine Test Cell
3. Providing Awareness Briefs and Videos
4. Expanding Flight Routes for Unmanned Aircraft Systems
5. Installing and Maintaining Sonic Boom Monitors

A sonic boom monitor, an important part of Pax River’s initiative to limit noise disturbances, has been installed and calibrated on base.

In an effort to continue noise mitigation efforts beyond what is specified in the EIS and ROD, the SO has also developed two noise analysis tools. The Sonic Boom Prediction Tool (SBPT), a pre-flight analysis tool, is used by ATR before every scheduled supersonic weapons-separations flight. The SBPT factors the type of aircraft, altitude, position and speed, along with several real-time environmental conditions to predict how and where the noise generated from a sonic boom will be concentrated.

The Flight Track Analysis Wizard (FTAW), a post-flight analysis tool, recreates the flight paths of aircraft associated with disturbance calls to determine what was happening at the time of the reported incident. The FTAW provides valuable information on both Pax River and non-Pax flights related to noise disturbance complaints, allowing the SO to assess flight patterns and their impacts on the community.

A final measure the SO takes to prevent noise issues from arising is through continuous communication with the community—this occurs in many different forums. Press releases are aired to alert the community to operations outside of business hours or normal operational tempo. Real estate pamphlets inform potential buyers about the types of aircraft and potential associated noise at Pax River. They also provide more information about the Navy’s Air Installation Compatible Use Zones (AICUZ), which provide visual representations of noise contours for Pax River and the nearby Webster Field Annex.

Noise management is an ever-present issue at Pax River and noise issues are expected to grow along with increased operations and surrounding population growth. The SO employs many different strategies and tools to manage noise disturbances and is constantly looking for new, more efficient ways to mitigate noise issues. Thanks to the proactive approach of the noise management program, the SO can maintain NAS Patuxent River’s positive relationship with the surrounding community, while ensuring the continuation of the Navy’s T&E mission. 📍

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