

FINDING OF NO SIGNIFICANT IMPACT
FOR GUAM FLIGHT TEST ENVIRONMENTAL ASSESSMENT/OVERSEAS
ENVIRONMENTAL ASSESSMENT

AGENCY: Missile Defense Agency

ACTION: Finding of No Significant Impact (FONSI)

BACKGROUND:

Within the Department of Defense (DoD), the Missile Defense Agency (MDA) is responsible for developing, testing, and fielding a missile defense system to defend the United States (U.S.) and its deployed forces, allies, and friends against missile attacks in all phases of flight. A missile defense system provides a layered defense consisting of various land-, sea-, and air-based weapons; sensor and communications systems; and command and control platforms that are used to defeat incoming ballistic, cruise, and hypersonic missiles in all phases of flight.

This Environmental Assessment/Overseas Environmental Assessment (EA/OEA) has been prepared by MDA to analyze the impacts of deploying and testing missile defense systems from Andersen Air Force Base (AAFB) on Guam, or the Broad Ocean Area (BOA) of the western Pacific Ocean.

DESCRIPTION OF PROPOSED ACTION:

Deploy and test missile defense systems, including up to two flight tests or tracking exercises per year from AAFB or at sea from a U.S. Navy ship underway in the BOA of the western Pacific Ocean for a period of 10 years (Proposed Action). A flight test represents a target missile flight, an interceptor missile flight, an intercept of a target missile, or a test of sensors independent of missile flight. For a single flight test, multiple interceptors and targets may be utilized. A tracking exercise involves using sensors to scan and track a target with no interceptor.

The Proposed Action (PA) is expected to begin in the first quarter of Fiscal Year 2025 with Flight Experiment Mission (FEM)-02. FEM-02 would include launching a Standard Missile (SM)-3 (interceptor) against a medium-range ballistic missile (target). The target would be air-launched from a C-17 or similar aircraft at an altitude greater than 20,000 feet, at least 800 nautical miles (1,483 kilometers) east of Guam in the BOA of the western Pacific Ocean. The interceptor would launch from Northwest Field (NWF) on AAFB. The first stage booster would separate from the interceptor quickly after launch and would land on a remote, uninhabited area of AAFB. Intercept of the SM-3 and the target would occur in the exosphere (the outermost layer of Earth's atmosphere) above the BOA of the western Pacific Ocean greater than 200 nautical miles from Guam and other populated islands. Inert debris from the intercept and physical components from the target and interceptor (the pallet and parachutes used to air-launch the target, and expended booster stages) would fall to the surface of the ocean greater than 88 nautical miles from Guam and other populated islands and sink to the ocean floor.

Future MDA and U.S. Army flight tests and tracking exercises would be conducted in a similar manner. All land-based interceptor launches would take place from NWF on AAFB but may use different land-based defensive weapons systems than the Aegis Weapon System (AWS) being used for FEM-02, such as the Phased Array Tracking Radar to Intercept of Target (PATRIOT) Advanced Capability-Three (PAC-3) Missile Segment Enhanced (MSE) system or “PAC-3 MSE,” Terminal High Altitude Area Defense (THAAD), or Indirect Fire Protection Capability (IFPC). Different radars and other systems could be used and would function similarly to the Army Navy/Transportable Radar Surveillance and Control-Series 6 (AN/TPY-6) that would be used for FEM-02. Each of these missiles, radars, and other systems would be similar to those used during FEM-02 in terms of function and environmental impacts. The number and types of sensors, interceptors, and targets used in a flight test or tracking exercise can be adjusted to create the desired test scenario.

Ship-based interceptor launches would also occur as described for FEM-02, except that no interceptor would be launched from land on Guam. During the sea-based flight test scenario, the interceptor would be launched from a U.S. Navy Aegis Cruiser or Destroyer at sea in the western Pacific Ocean. At-sea flight tests could include an SM-2 or SM-6, in addition to the SM-3.

Tracking exercises would not include an intercept. Tracking exercises could include the launch of an interceptor or target. If an interceptor or target were launched for a tracking exercise, it would follow its predetermined trajectory, eventually impacting the surface of the BOA in the western Pacific Ocean greater than 200 nautical miles from Guam and other populated islands and sinking to the ocean floor.

PURPOSE AND NEED:

The purpose of the PA is to validate the interoperability of multiple sensors and interceptor systems from MDA, the U.S. Navy, and the U.S. Army, that could become a part of the “system of systems” (or the backbone) of a missile defense system developed to protect Guam. These flight tests and tracking exercises are needed to facilitate research and increase the DoD’s understanding of the ability of a missile defense system, including the AWS, PATRIOT, THAAD, and IFPC systems, and supporting sensors to counter the threat presented by short-, mid-, and long-range ballistic missiles, cruise missiles, and hypersonic missiles in a realistic environment. Further, this action is needed to significantly improve realistic Command and Control, Battle Management and Communications in multiple theaters around the world, as well as to increase ballistic missile, cruise missile, and hypersonic missile threat detection and defeat capabilities for Guam.

ALTERNATIVES CONSIDERED:

No Action Alternative: Under the No Action Alternative, no flight tests would occur from land- or sea-based launchers; no tracking exercises to test or calibrate the land-, airborne-, sea-, and space-based sensors would occur; and AAFB would continue with normal activities.

Alternative 1: Flight tests or tracking exercises utilizing land-based launch systems for interceptor launch with land-, airborne-, sea-, and space-based sensor integration.

Alternative 2: Flight tests or tracking exercises utilizing land- or sea-based launch systems for interceptor launch with land-, airborne-, sea-, and space-based sensor integration.

Alternative to be Implemented: Alternative 2 is the Preferred Alternative for implementation as it best meets the purpose of and need for the PA and would not result in significant impacts on the human and natural environment.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR ANALYSIS:

A second alternative launch location was considered for the flight tests of interceptor systems: Orote Point abandoned airfield, Naval Base Guam (NBG). Due to potential safety considerations, including the proximity to ammunition storage, impacts on airspace, performance requirements and space and layout limitations, the launch location from the Orote Point abandoned airfield at NBG was not carried forward as an alternative site for analysis.

SUMMARY OF POTENTIAL ENVIRONMENTAL CONSEQUENCES:

Impacts on potentially affected resources were analyzed in detail in the EA/OEA, including direct, indirect, and cumulative impacts. Cumulative impacts were assessed as part of the EA/OEA’s existing conditions, and in the direct and indirect impact analysis. No significant direct, indirect, or cumulative environmental impacts would occur from implementing the PA. A summary of the impacts associated with Alternative 2 (Preferred Alternative) is provided below.

Resource Area	Alternative 2 (Preferred Alternative)
Airspace Management	Close coordination by the MDA launch operations manager with the Federal Aviation Administration (FAA) (including the issuance of Notices to Air Missions [NOTAMs] and establishment of a temporary flight restriction), Guam Center Radar Approach Control, and Guam International and AAFB Air Traffic Control Towers would minimize the potential for any adverse impacts on airspace use in the vicinity of the launch site and planned missile downrange profile. And because sea-based flight tests or tracking exercises would take place far from land and populated areas, the analysis conclusions for airspace management are consistent with a minor determination and therefore would result in a less than significant impact on airspace management.
Air Quality	Due to the expected dispersion and transport of pollutant plumes from intermittent and low rates of emissions, under local meteorological conditions, and infrequent public exposure, impacts are not expected to interfere with the attainment of Ambient Air Quality Standards or contribute to human health risks from hazardous air pollutant (HAP) exposure in areas where the public may be present. Additional vessel activities would mainly occur in distances well beyond 12 nautical miles from Guam. The expected dispersion and

Resource Area	Alternative 2 (Preferred Alternative)
	<p>transport of pollutant plumes from these intermittent emissions in the broad ocean area are not expected to significantly increase concentrations of criteria pollutants or HAPs or have an impact on human health. For this reason, the analysis conclusions for air quality under Alternative 2 (Preferred Alternative) are consistent with a minor determination and would result in a less than significant impact on air quality.</p>
<p>Climate Change and Greenhouse Gases</p>	<p>Expected greenhouse gas (GHG) emissions are relatively minor and make up a negligible percentage of the global GHG emissions. The analysis conclusions for climate change and greenhouse gases are consistent with a minor determination and therefore would result in a less than significant impact on climate change and greenhouse gases.</p>
<p>Terrestrial Biological Resources</p>	<p>Wildlife could be exposed to increased noise levels; however, noise impacts on wildlife would likely be limited to short-term, minor disturbances. The highest potential for physical disturbance or strike of wildlife or Endangered Species Act (ESA)-listed plant species would be from the interceptor’s expended first stage booster. Given the size of the booster and infrequent nature of the flight tests, it is unlikely the falling booster would result in a direct strike on ESA-listed wildlife species. If the booster did damage an ESA-listed species, such as a listed plant, the number of individual plants affected would be small (less than 6) and would not cause long-term effects to the populations or species. There is also a potential for the physical presence of flight test personnel in the proximity of wildlife is during the recovery of the first booster. Personnel presence during recovery could result in a startle response, resulting in nearby wildlife fleeing the area. However, these impacts would be short term and not result in any long-term behavioral impacts. Radar use is expected to have no effect on biological resources due to the radar operations, flight behavior, and ecology of birds and bats, and lack of roost habitat near the sensors field of regard. Lastly, due to the presence of humans, man-made structures, vehicles, and lighting within the project area, as well as the location of the radar, it is unlikely that birds would come within proximity of the radar. The analysis conclusions for terrestrial biological resources are considered moderate and therefore would result in a less than significant impact on terrestrial biological resources.</p> <p>Sea-based flight tests or tracking exercises would occur far from land and have no impact on terrestrial biological resources and, therefore, would result in a less than significant impact on terrestrial biological resources.</p>

Resource Area	Alternative 2 (Preferred Alternative)
	<p>In addition, the U.S. Navy, on behalf of MDA, consulted with the U.S. Fish and Wildlife Service (USFWS) for activities associated with the FEM-02 flight test that may adversely affect ESA-listed species in accordance with section 7(a)(2) of the ESA. On September 8, 2024, the U.S. Navy received a biological opinion from the USFWS that the FEM-02 flight test may adversely affect ESA-listed species due to the interceptor’s first stage booster drop on AAFB and from noise associated with the interceptor launch. However, the USFWS biological opinion concluded anticipated adverse effects on Cycad plants and Mariana fruit bats are not expected to rise to the level of take.</p>
<p>Marine Biological Resources</p>	<p>Military expended material from interception debris, parachutes, and expended stages would be introduced into the marine environment. Debris resulting from successful interception would have the greatest potential to strike marine biological resources. Due to the low densities of marine biological resources within the potential flight test debris zone, the potential for debris to strike mobile marine biological resources would be extremely low. All debris associated with the flight tests would sink to the seafloor. Flight tests and subsequent debris would be infrequent (twice annually or less). The likelihood of any fish, sea turtle, marine mammal, or seabird being in the exact location of debris suspended in the water column and ingesting it is extremely low.</p> <p>Risk for entanglement would be present while parachutes are suspended in the water column, which would be a relatively short period of time. Once expended parachutes have reached the seafloor, they would pose no risk for entanglement. Impacts on marine biological resources from noise from splashdown of missile components have the potential to affect the behavior and hearing sensitivity in birds, marine mammals, sea turtles, and fish.</p> <p>However, the probability of marine biological resources being in the impacted area and at the ocean surface is low; therefore, the risk of potential impacts from noise is low. The analysis conclusions for marine biological resources are consistent with a minor determination and therefore would result in a less than significant impact on marine biological resources.</p> <p>In addition, the U.S. Navy, on behalf of MDA, consulted with the National Marine Fisheries Service (NMFS) for activities associated with the FEM-02 flight test that could adversely affect ESA-listed species and essential fish habitat, in accordance with section 7(a)(2) of the ESA, and the Magnuson-Stevens Fishery Conservation and Management Act and the Sustainable Fisheries Act, respectively. On July 11, 2024, the U.S. Navy received a letter of concurrence from NMFS that the FEM-02 flight test may affect, but is not</p>

Resource Area	Alternative 2 (Preferred Alternative)
	likely to adversely affect ESA-listed species and provided conservation recommendations to minimize potential risks to essential fish habitat in the project areas.
Cultural Resources	<p>There are no identified historic properties within the launch area or potential booster drop area at AAFB. Additionally, no historic properties have been identified within the relevant portions of the potential flight test debris area. Debris falling to the seafloor is not likely to impact any unidentified historic properties that may exist due to dispersion of debris through the water column. Sea-based flight tests or tracking exercises would occur far from land. The analysis conclusions for cultural resources and historic properties are consistent with a negligible determination and would result in a less than significant impact on cultural resources and historic properties.</p> <p>In addition, the U.S. Navy, on behalf of MDA, consulted with the Guam State Historic Preservation Office (SHPO) under Section 106 of the National Historic Preservation Act (NHPA) on activities associated with the FEM-02 flight test that may potentially impact historic properties. On July 22, 2024, the Navy received a letter of concurrence from the Guam SHPO agreeing with the Navy’s determination of “no historic properties affected” by the FEM-02 flight test. Thus, MDA fulfilled its responsibilities under Section 106 of the NHPA.</p>
Environmental Justice and Children’s Environmental Health and Safety Risk	<p>Potential impacts on air quality, climate change and greenhouse gases, and public health and safety from land-based flight tests or tracking exercises would be minor. In addition, there are no anticipated impacts on socioeconomic resources. Therefore, there would be no disproportionately high impacts on or adverse effects to any low-income or minority populations in the vicinity of AAFB. The policies and procedures that protect the health and safety of the public and workers also protect children. Thus, Alternative 2 (Preferred Alternative) would not disproportionately expose children to environmental health or safety risks. Sea-based flight tests would occur far from land or populated areas. The analysis conclusions for environmental justice under Alternative 2 (Preferred Alternative) are consistent with a minor determination and therefore would result in a less than significant impact on environmental justice.</p>

Resource Area	Alternative 2 (Preferred Alternative)
Public Health and Safety	<p>Adherence to the applicable safety regulations, range safety procedures, and standard operating procedures protect the health and safety of the public and workers. These and other procedures ensure ground safety, flight safety, range clearance and surveillance, sea-surface area clearance and surveillance, and control of commercial air traffic. These procedures include coordination with the FAA and U.S. Coast Guard and publishing Notices to Mariners and NOTAMs. The FAA would also establish a Temporary Flight Restriction to protect military and civilian aircraft from the non-ionizing High-intensity Radiated Field of the TPY-6 radar when active. To further ensure public health and safety, roadblocks, access control, restricted access, and security sweeps would occur at AAFB. In addition, MDA would request landowners voluntarily remain away from select private properties in the Jinapsan area east of the launch area outside of AAFB during FEM-02. Similar requests may be made for future land-based flight test events. Sea-based flight tests and tracking exercises would occur far from land and populated areas. The analysis conclusions for public health and safety are consistent with a minor determination and therefore would result in a less than significant impact on public health and safety.</p>
Noise	<p>Land-based flight tests and tracking exercises could result in sound levels characterized as very loud near the launch pad. However, flight tests and tracking exercises would occur infrequently, be short in duration, and have a minute effect on the overall sound in the area. Any sonic boom would be typically audible for only a few milliseconds and would be of less intensity than larger rockets which have been considered by NMFS to be less than significant to marine species. Sea-based launches would occur far from sensitive receptors. The analysis conclusions for noise are consistent with a minor determination and therefore would result in a less than significant impact on noise.</p>

ENVIRONMENTAL MANAGEMENT AND MONITORING ACTIONS:

NEPA requires federal agencies to consider appropriate mitigation measures to avoid, minimize, or compensate for specific impacts. MDA and the services are taking steps to avoid and minimize impacts from the PA.

Best Management Practices and Conservation Measures

DoD personnel would implement the following efforts as best management practices to avoid and minimize impacts from the PA.

BMP	Description
Air Quality	Construction activities would mitigate emissions from fugitive dust and burning of fossil fuels by complying with Guam Air Pollution Control Standards.
Biosecurity Outreach and Education	The DoD will implement a natural resources education program to ensure all military and contractor personnel are informed of the biological resources in the project area, including invasive species, special-status species, avoidance measures, and reporting requirements in the project area.
Brown Treesnake Interdiction	Joint Region Marianas has established a comprehensive brown treesnake interdiction program to ensure that military activities, including the transport of civilian and military personnel and equipment to and from Guam, do not contribute to the spread of the brown treesnake to other islands or regions. Brown treesnake interdiction requirements are specified in DoD instructions (e.g., Commander Navy Region Marianas Instruction 5090.10B, Brown Tree Snake Control and Interdiction Plan). The PA would comply with these established procedures.
Biological Monitoring of Booster Recovery Activities	A qualified biological monitor must be present and monitor all booster recovery activities. This includes ensuring that no unnecessary vegetation, particularly ESA-listed plant species, is disturbed or damaged while accessing the site of the expended booster, while preparing the booster for extraction, and when exiting the recovery area. The qualified biologist will tie a flag to ESA-listed plant species for avoidance during the ingress and egress of the recovery area and during the preparation and retrieval of the booster. In addition, the qualified biologist would determine mortality of ESA-listed plants that occur due to the interceptor's first stage booster drop, and MDA would propagate and transplant a commensurate number of ESA-listed plant species in ungulate-free habitats.

Other Avoidance, Minimization, and Mitigation Measures

The following measures to avoid, minimize, or mitigate environmental impacts associated with the PA are included in this EA/OEA:

- After the conclusion of FEM-02, a helicopter would be used to retrieve the interceptor's first booster stage.
- Undeveloped areas would not be used for placement, storage, or launch of flight test or tracking exercise components.

No other measures to avoid, minimize, or mitigate environmental impacts associated with the PA are included in this EA/OEA.

PUBLIC REVIEW AND COMMENT:

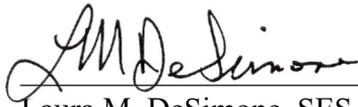
A Notice of Availability of the Proposed Final EA/OEA and unsigned Proposed FONSI for public review and comment was published in the Pacific Daily News and Guam Daily Post three times on June 2, 2024; June 3, 2024; and June 12, 2024. Hard copies of the documents were made available at the Dededo Public Library and the Nieves M. Flores Memorial Library on Guam, and downloadable versions were posted to the MDA public website at <https://www.mda.mil/system/guamft/>.

MDA initially provided a 30-day public review and comment period, which began June 2, 2024. The public review and comment period was extended an additional 30 days for a total 60-day public review and comment period which concluded on August 2, 2024. Sixty-six comments were received in total during the public review and comment period. Each comment was reviewed and categorized into specific topics representing the general issues or concerns expressed during the public review and comment period, and responses were provided to these issues or concerns. The comment topics, issues and concerns, and responses are provided in Appendix I (Public Comments and Responses) of the Guam Flight Test EA/OEA.

CONCLUSION:

The analysis of the PA to deploy and test missile defense systems, including up to two flight tests or tracking exercises per year from AAFB or at sea from a U.S. Navy ship underway in the BOA of the western Pacific Ocean for a period of 10 years, concluded that its implementation would not have a significant environmental impact on the human and natural environment, either by itself or cumulatively with other actions. After thoroughly considering the facts herein, the undersigned finds that the PA is consistent with existing environmental policies and objectives set forth in the National Environmental Policy Act and its implementing regulations. Therefore, an Environmental Impact Statement is not required.

APPROVE:



Laura M. DeSimone, SES
Executive Director
Missile Defense Agency

10/31/2024

DATE: