

to avoid or minimize environmental impacts.

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**SUPPLEMENTARY INFORMATION:**

**Overview**

The United States (U.S.) requires a more accurate and effective defense against ballistic missiles by destroying them during the boost phase, just after launch. Currently, the U.S. and its allies are limited to defense of troops of high-value assets within a small area of a theater of operations as the missile nears its target. Improvements in missile range and accuracy and the rapid increase in the number of missile-capable nations increase the threat. The ABL aircraft is a modified Boeing 747 aircraft that accommodates a laser-weapon system and laser fuel storage tanks. The ABL aircraft incorporates an Active Ranging System (ARS) laser, a Track Illuminator Laser (TILL), and a Beacon Illuminator Laser (BILL); a laser-beam control system designed to focus the beam on target; and a High-Energy Laser (HEL) (*i.e.*, chemical, oxygen, iodine laser [COIL]) designed to negate the target. The ARS is a lower-power gas laser, and the BILL and TILL are lower-power solid-state lasers. An onboard Battle Management Command Center provides computerized control of aspects of the laser-weapon system, communications, and intelligence. The ABL aircraft would fly at high altitudes and would detect and track launches of ballistic missile using onboard sensors. During flight-test activities, active tracking of the missile with the BILL and TILL would begin at approximately 35,000 feet above mean sea level.

The ABL program is one of the elements of the MDA Ballistic Missile Defense System (BMDS) that is intended to provide an effective defense for the U.S., its deployed forces, and its friends and allies from limited missile attack during all segments of an attacking missile's flight. The ABL element of the BMDS is being developed to provide an effective defense to limited ballistic missile threats during the boost segment of an attacking missile's flight.

The *Final Environmental Impact Statement for the Program Definition and Risk Reduction Phase of the Airborne Laser Program* (FEIS) was published in April 1997. The 1997 FEIS analyzed several alternatives for establishing the Home Base, the Diagnostic Test Range, and the Extended-Area Test Range that are required to effectively demonstrate the ability of the ABL system. The 1997 FEIS considered Edwards Air Force

Base (AFB), California, and Kirtland AFB, New Mexico, as possible Home Base locations; White Sands Missile Range (WSMR), New Mexico, and China Lake Naval Air Warfare Center, California, as the Diagnostic Test Range; and the Western Range, including Vandenberg AFB and/or Point Mugu Naval Air Warfare Center Weapons Division, both in California, as the Extended-Area Test Range.

The ROD for the 1997 FEIS identified Edwards AFB as the Home Base (to support the ABL aircraft and conduct ground-test activities of the ABL system), WSMR as the Diagnostic Test Range, and the Western Range as the Expanded-Area Test Range (both for supporting proposed flight-test activities of the ABL systems). Based upon operational and environmental concerns in that FEIS, Edwards AFB was chosen as the primary location for conducting ground-test activities. Kirtland AFB and WSMR were identified as alternative ground-test locations in the event that ground testing was not possible at Edwards AFB.

**Purpose and Need**

The SEIS sets forth the supplemental environmental analysis required based on changes in the proposed test program that have occurred since the 1997 FEIS was completed and examines proposed test activities at Edwards AFB, Kirtland AFB, WSMR/Holloman AFB, and Vandenberg AFB. Holloman AFB is a U.S. Air Force installation that shares most of its boundary with WSMR. The 1997 FEIS previously examined test activities and test locations and is considered the No-Action Alternative for this SEIS. The following is a list of new or refined actions that require the preparation of an SEIS:

- Testing of two ABL aircraft (referred to as the Block 2004 aircraft and an improved follow-on aircraft, the Block 2008) rather than the individual aircraft addressed in the 1997 FEIS
- Proposed ground testing that was not considered in detail in the 1997 FEIS
- Potential effects due to off-range lasing during test activities
- Potential effects of lowering the test altitude of the ABL aircraft from 40,000 feet to 35,000 feet or higher
- Testing of the ARS laser, the BILL, the TILL, and the Surrogate High-Energy Laser (SHEL) systems that were not considered in detail in the 1997 FEIS
- Refinement of proposed ABL test activities (*i.e.*, location of tests, types of tests, and number of tests).

These new or refined actions will maximize testing efficiencies and realism, and provide further

clarification of the ABL weapon system test program.

**Decision**

The MDA will proceed with the Proposed Action as described in the SEIS and summarized below. Appropriate management plans and regulations would be adhered to and suitable mitigation measures would be initiated to minimize potential adverse effects.

**Proposed Action and Alternatives**

The Proposed Action is to conduct test activities of the ABL system at test ranges associated with Edwards AFB and Vandenberg AFB, California, and Kirtland AFB and WSMR/Holloman AFB, New Mexico. Test activities would involve testing the laser components on the ground and in flight to verify that laser components operate together safely and effectively. Two ABL aircraft (Block 2004 and Block 2008) would be utilized during test activities. Software upgrades to the Block 2004 aircraft would be tested and added to that test aircraft under a Block 2006 effort. Once upgraded with the newer operating system, the Block 2004 would be designated as the Block 2006 aircraft. Ground testing of the ABL system is proposed at Edwards AFB. Kirtland AFB and WSMR/Holloman AFB have been identified as alternative ground-test locations if ground tests cannot be conducted at Edwards AFB. Flight testing is proposed at the R-2508 Airspace Complex (Edwards AFB), Western Range (Vandenberg AFB), and WSMR (including Federal Aviation Administration [FAA]-controlled airspace and airspace utilized by Fort Bliss).

The ABL aircraft would be housed at an existing hanger at Edwards AFB. Edwards AFB is also the location where the laser systems would be integrated into the aircraft, where ground tests would occur, and is the location for initial aircraft flight test. Although flight testing of the ABL system would occur within the R-2508 Airspace Complex, Western Range and WSMR, ABL test flights would begin and end at Edwards AFB. The ABL aircraft could be used to support other BMDS incidental exercises and deployments from other locations. These operations would be supported by other environmental analysis as appropriate.

**Ground-Testing Activities.** Ground testing of the lower-power laser systems (*i.e.*, ARS, BILL, TILL, and SHEL) would be performed at Edwards AFB. Ground-testing activities would be conducted from an aircraft parking pad or the end of a runway with the laser beam