

**RECORD OF DECISION  
STRATEGIC TARGET SYSTEM PROGRAM**

**INTRODUCTION**

Pursuant to Council on Environmental Quality regulations implementing the National Environmental Policy Act, this document records the Strategic Defense Initiative Organization (SDIO) decision to implement the Strategic Target System program at the Kauai Test Facility (KTF) located on the Pacific Missile Range Facility (PMRF), Kauai, Hawaii.

The PMRF has been used for fleet training operations and for research and development activities. In addition PMRF launch facilities are used to launch test flights of tactical missiles and other projectiles. The KTF has been the site of more than 300 rocket launches since the facility was first established for that purpose in 1962. The PMRF has launched approximately 800 rockets and targets during the same period. The proposed action will increase these activities by four launches each year over the next ten years.

The Environmental Impact Statement (EIS) for the Strategic Target System was prepared by the U.S. Army Strategic Defense Command (USASDC) acting as lead agency. The SDIO and the U.S. Navy served as cooperating agencies. The Final EIS was filed with the Environmental Protection Agency and a Notice of Availability was published in the Federal Register on May 22, 1992.

Based on the findings of the EIS, a mitigation plan has been developed which, when fully executed, will avoid or reduce to nonsignificant levels environmental impacts resulting from implementation of the Proposed Action. The SDIO is firmly committed to full execution of this mitigation plan which is summarized in this document and incorporated by reference.

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## ALTERNATIVES

Alternative launch sites and launch vehicles were considered. The alternative launch sites considered were U.S. Army Kwajalein Atoll, Republic of the Marshall Islands; Wake Island; Johnston Island; Midway Island; Guam; Poker Flat Research Range, AK; floating barges; fixed ocean platforms; Vandenberg Air Force Base, CA; and White Sands Missile Range, NM. Alternative launch vehicles considered were the Castor IV, Minuteman I and II, Minuteman III, Poseidon, Pegasus, Taurus, an augmented Strategic Target System vehicle, and several hybrid vehicle configurations. The alternative launch sites and alternative launch vehicles were eliminated because they did not meet operational and safety criteria or because they were excluded by treaty limitations.

The Strategic Target System EIS analyzed two alternatives: No-Action and the Proposed Action. The No-Action Alternative would continue the development of the Global Protection Against Limited Strikes program but without the ability provided by the Strategic Target System program to gather critical actual flight test data. No shipments of boosters or liquid propellants would take place. There would be no assembly or checkout of a launch vehicle. The Strategic Target System vehicle would not be launched. No range safety operations or upgrades would occur. No safety zone or easement would be established.

The Proposed Action is to launch Strategic Target System vehicles with nonnuclear payloads (experiments and test objects) from KTF on a suborbital trajectory. These flights would conclude within range of the sensing and tracking stations at U.S. Army Kwajalein Atoll in the Marshall Islands to support data gathering and other SDI research and development activities. The Proposed Action includes constructing flight support facilities and establishing land use controls around the launch site. Including the first two demonstration launches, a maximum of four launches per year would take place over a 10-year period.

## IMPACTS/MITIGATIONS

The EIS demonstrates that the potential environmental impacts of the Strategic Target System can be avoided or reduced to nonsignificant levels by mitigation measures taken as part of the Proposed Action. A number of modifications were made to the program in response to public concern. Discretionary measures described in the EIS could even further modify the program to provide additional mitigation. The Proposed Action, including the adopted mitigations, will incorporate all practicable means to avoid or minimize all environmental harm. Impacts and mitigation measures are summarized below.

- a. **GEOLOGY AND SOILS.** New construction will take place at previously disturbed sites. The soil in these areas has already been leveled and stabilized. Soil studies performed to support the EIS found no evidence of contamination from the Strategic Target System type of solid-fuel components from previous launches over many years. Nonetheless, additional post-launch soil samples will be taken to validate these findings.
- b. **WATER RESOURCES.** Water sampling performed to support the EIS showed no evidence that surface water or groundwater has been affected by past launches. Booster motor emission rates, dispersion rates for those emissions, and the expected wind velocities are such that no measurable change is expected to occur in the quality of surface water. Dispersion models predict that no emission byproducts will reach island drinking supplies. Additional post-launch water samples will be taken to verify that booster emission deposition is not significant.
- c. **AIR QUALITY.** The air quality impacts of Strategic Target System launches have been studied extensively using two dispersion models. These studies indicate that airborne pollutants from either a normal launch or a terminated launch would not endanger public health or

cause significant environmental impacts. Nor would the amount of contaminants from the Strategic Target System program contribute measurably to the depletion of stratospheric ozone. Since no significant impacts were identified, and consistent with previous study results, no halon substitute will be used. However, the Army will continue to monitor investigations into alternative fluids to Freon 114B2 (halon 2402) and the Strategic Target System will comply with the Clean Air Act and all implementing regulations.

Consideration was given to restricting launches to times when wind speeds are greater than one meter per second, but in light of the EIS analysis comparing modeling results with accepted standards and coupled with mission needs, this restriction will not be applied. However, air samples will be collected during the first demonstration launch to validate the accuracy of the models and to evaluate compliance with federal and state standards.

- d. **BIOLOGICAL RESOURCES.** Construction will remove only 0.2 hectares of weedy ground cover from an area that is regularly mowed. The continuing presence of sensitive plant species after many years of launch activity suggests that emissions from Strategic Target System launches will not have any significant impact on adder's tongue fern or other rare plant species. Impacts from construction will be mitigated by avoiding plants or relocating them to protected locations.

Trees and other vegetation on the dune adjacent to the launch pad could be ignited during a launch. To minimize potential for damage the Army will install a portable blast deflector shield at the launch pad perimeter. In addition, any dead brush will be cleared from around the launch pad without affecting the dune. Nearby vegetation will be sprayed with water prior to a launch to further reduce the chance of fire. As in all similar launches, a fire crew will stand by.

As with soils, vegetation studies performed in support of the EIS found no evidence of contamination from the Strategic Target System type of solid-fuel components due to previous launches over many years. Additional post-launch vegetation samples will be taken to verify that booster emission deposition is not significant.

The Newell's shearwater is a federally listed threatened species that may fly over PMRF at night, mainly between April and November. Reflection from outdoor lighting could disorient the birds. Lighting approved by the U.S. Fish and Wildlife Service will be installed to minimize reflection.

The likelihood of debris from a spent booster or terminated launch striking a humpback whale or monk seal is remote. If humpback whales or monk seals are sighted in the safety zone or launch hazard area, the launch will be delayed until the areas are clear. Beach surveys will be conducted prior to any activity that might otherwise interfere with green sea turtle nesting areas and any nesting areas found will be avoided.

- e. **CULTURAL RESOURCES.** New construction will not affect the Nohili Dune. Where construction is planned south of the dunes, ground-penetrating radar will be used to scan the subsurface. An archaeologist will be on-site during ground-disturbing activities. Any human remains that might be discovered or inadvertently disturbed will be treated in accordance with the Native American Graves Protection and Repatriation Act and the National Historic Preservation Act. Analysis of human remains would be nondestructive and would be conducted on Kauai. Cultural resources could be affected by an on-pad mishap or early flight termination. Measures to protect cultural resources will include installation of a portable blast deflector shield, spraying vegetation with water to reduce risk of ignition, and using

spray nozzles rather than a directed stream to avoid erosion and to prevent possible destruction or exposure of cultural resources that may be present in the dunes. If any burning should occur, archaeological surveys will be conducted.

No impacts to cultural resources are expected from transporting liquid propellant to PMRF. Prior to landing craft crossing the beach, an additional cultural resource survey will be undertaken. If any cultural resources are noted, these areas will be avoided during transport. An archaeologist will be present during transport activities.

- f. **LAND USE.** Public access to a small portion of the beaches fronting PMRF will be restricted for about 56 days a year. Because recreational use at this location is low and many other beaches are accessible, closure at this location is not considered significant. To insure public safety, 20 minutes before each scheduled launch, portions of the adjacent sugar cane fields and Polihale State Park will be verified clear of people. Up to three hours before a scheduled launch, PMRF personnel will begin to advise people within these areas of their need to leave to allow the area to be verified clear 20 minutes prior to launch. The PMRF will notify the State of Hawaii and Kekaha Sugar Company authorities at least seven days prior to a scheduled launch when clearance of the area is required. The waters offshore will be cleared prior to each scheduled launch.

Consideration was given to limiting launches to late night or early morning, but was rejected because of mission requirements and the absence of significant impacts without this measure.

- g. **NOISE.** Noise levels from the Strategic Target System booster will be substantially less than the Strypi booster that has been launched more than 20 times from PMRF and KTF without known public concern.

The noise level will be high during liftoff but will last only a few seconds. The predicted peak noise level at liftoff reaching the nearest off-base housing is estimated to be well within standard acceptable limits.

Noise will also be monitored during the first demonstration launch to validate the accuracy of the noise model.

h. **HAZARDOUS MATERIALS AND WASTE.** Hazardous materials and wastes generated by Strategic Target System activities will not exceed existing capabilities at PMRF for handling and disposal in accordance with the strict federal regulations currently in force. Hazardous materials will be transported by the safest available routes in containers approved by the U.S. Department of Transportation (DOT). Fueling operations will be conducted in accordance with the already strict procedures in place at KTF.

i. **PUBLIC HEALTH AND SAFETY.** A safety zone and a Ground Hazard Area have been established to protect workers and the public.

Liquid hydrazine will be transported in a container approved by the DOT. No more than 55 gallons will be shipped at one time. The preferred method will be by military, exclusive-use cargo aircraft. An alternate method will be by commercial cargo vessel from the continental U.S. to Oahu or Port Allen and transfer by landing craft to the beach at PMRF.

Liquid nitrogen tetroxide will be transported in a container approved by the DOT. No more than 55 gallons will be shipped at a time. If a waiver can be obtained from DOT, the preferred method will be by military, exclusive-use cargo aircraft. If a waiver cannot be obtained, the preferred method will be by commercial cargo vessel from the

continental U.S. to Oahu or Port Allen and transfer by landing craft to the beach at PMRF.

No liquid propellant will be transported over public roads on Kauai except during emergency situations as directed by the Harbor Master. Any such transport will be in complete coordination with State and local officials and employ DOT approved procedures.

- j. **VISUAL RESOURCES.** The appearance of Strategic Target System program facilities is not significant when measured against existing buildings and structures on the launch pad and within KTF. No significant removal of vegetation is planned, and fire protection will be provided during launches by wetting adjacent vegetation and placing fire fighting crews on standby. These measures should ensure that no impact to visual resources will occur.

## DECISION

The increment of environmental harm which could occur with the Proposed Action is very small. The analysis in the EIS indicates that the No-Action Alternative is the environmentally preferred alternative, however, I am convinced that the mitigation measures described here and in the EIS will avoid all potential environmental impacts from the Proposed Action or reduce them to not significant levels.

There are compelling technical and economic reasons for selecting the Proposed Action. First, the Strategic Target System uses primarily existing components and is capable of delivering the necessary payloads without extensive modifications. Second, reliable performance of Strategic Target System boosters is well documented, ensuring that these important experiments are conducted reliably and safely. This not only ensures the public's health and safety, but minimizes the chance of failed experiments that would result in additional costs. Moreover, a decision other than the Proposed Action would result in serious delays in the development of the National Ballistic Missile Defense System as directed by Congress in the Missile Defense Act of 1991. This would not only increase costs of the target delivery system, but would also tremendously increase costs associated with the ballistic missile defense systems which are to be developed using these targets and the data gained from these experiments.

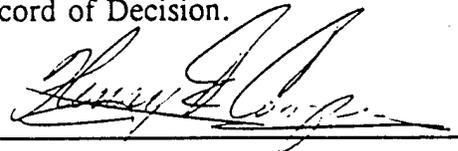
There are also strong national policy reasons for the selection of the Proposed Action over the No-Action alternative. The President has directed SDIO to develop sufficient information to demonstrate the feasibility of an anti-ballistic missile system. Congress has passed the Missile Defense Act of 1991, which directs SDIO to develop for deployment a limited ballistic missile defense system by fiscal year 1996 or by the earliest date that the technology is available. In order to accomplish this mandate, SDIO needs the data which will be obtained by conducting the Strategic Target System flights. No other available course of action will provide this data. The test program described in the Proposed Action is needed to satisfy the mandate of the President and Congress.

After a careful review of the EIS and consideration of national policy, technical and economic constraints, I have decided to carry out the Strategic Target System program as described in the Proposed Action. Arriving at this decision, I was not unmindful of other concerns expressed by the public, including those relating to Native Hawaiians and to the "Spirit of Kauai". This decision is contingent upon the implementation of the mitigation measures described in this Record of Decision.

#### MONITORING AND ENFORCEMENT

I ask the Commanding General, USASDC to monitor the first launch in accordance with Army Regulation 200-2, Appendix F and, at least annually, report to me on the continuing implementation of the mitigations directed above.

In regard to Strategic Target System test activities and the contracts to support them, I direct the USASDC to monitor test activities to ensure that government contractors and personnel are adhering strictly to the environmental standards and controls described in the EIS and ordered in this Record of Decision.



HENRY F. COOPER

DIRECTOR