

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
BOLT EXPERIMENT
MAUI, HAWAII

INTRODUCTION

The BOLT Experiment is being proposed by the U.S. Air Force (USAF) to evaluate the performance of systems on-board a satellite in a geo-synchronous orbit. These particular tests cannot be performed satisfactorily on the ground before the satellite is launched. The information gained from the BOLT experiment would be used in the development of future satellites.

PROPOSED ACTION

The U.S. Air Force BOLT experiment is a short-term (approximately 6 weeks_ technical experiment designed to evaluate the performance of systems on-board a satellite in a geo-synchronous orbit. The satellite is currently positioned over the western Pacific. Ground facilities required to support BOLT include a transmitting station, or laser source system (LSS), which include a laser source, laser and beam-control equipment, and a beam director. Because BOLT requires satellite-tracking capabilities and the experiment is short-term, it is necessary that the LSS be located in close proximity to a facility where satellite-tracking capabilities already exist. BOLT would thus require only minor additions to an existing facility.

The proposed action is the placement of the BOLT laser system at the U.S. Air Force Maui Optical Station (AMOS) facility, Maui, Hawaii. This action would require the construction of a utility building at AMOS and the shipment and installation of a complete laser system and experiment-specific support equipment. Pointing and tracking would be accomplished with the beam director and tracing facility currently operational at AMOS. Only fixed laser and beam transfer optics would be required. At the end of the BOLT experiment, the laser and experiment-specific equipment would be removed from AMOS. The utility building would remain. The alternative to the proposed action is the no-action alternative.

SUMMARY OF ENVIRONMENTAL IMPACTS

Geology and Soils

Construction of BOLT-related facilities (utility building and gas exhaust line) at AMOS would not change the physiography of the land; the site is flat and has previously been graded and no additional grading activities would be required. There would be no significant should or erosion consequences to sitting the BOLT laser source system at the AMOS facility since construction would occur in previously disturbed areas.

Water Resources

Sitting the LSS at AMOS would not involve additional grading or major land disturbance activities. Therefore, there are no probable construction impacts on surface water due to erosion or runoff or as a result of modification of drainage patterns. As there are no developed groundwater sources in the vicinity, no impacts on such sources are expected.

No significant additional use of water or discharge is associated with operation of the BOLT experiment at AMOS. Approximately 150 gallons of water would be generated in the exhaust-scrubbing operation. This spent solution would have a pH of approximately 8 and would be safe to put down a domestic sewer. The wastewater would be taken to a wastewater treatment facility operated by the County of Maui and disposed of in the sewer system. There would therefore be no impact to surface or ground water quality from operation of the BOLT experiment.

Air Quality

The proposed BOLT program would not significantly impact air quality on Maui. A short-term, temporary increase in fugitive and combustive emissions would result from construction activities at the AMOS site. Violation of the national ambient air quality standards (NAAQS) is not expected and this impact would be insignificant.

The BOLT experiment would produce atmospheric emissions of criteria pollutant (SO₂) and a non-criteria pollutant, hydrogen fluoride (HF). The EPA INPUFF 2.0 model was used to estimate reasonable worst-case ground-level concentrations of SO₂ and HF generated by the project. Peak concentrations of HF were below both the threshold limit value (TLV) and short-term estimated safe level (STESL) for HF, indicating that HF impacts from the BOLT experiment would be insignificant. The peak one-hour modeled concentration of SO₂ was less than 1 percent of the three-hour NAAQS for SO₂. As a result, SO₂ impacts are considered to be insignificant for both short- and long-term averaging periods.

Biological Resources

Two federally protected bird species and one federally protected species of bat have been reported for the project site. A biological assessment, in compliance with Section 7 of the Endangered Species Act, which supports a no jeopardy opinion, has been prepared and submitted to the U.S. Fish and Wildlife Service for their action. Construction at AMOS would take place within a previously disturbed area. Impacts on biological resources from construction and operation of the BOLT experiment are predicted to be insignificant.

Noise

Noise produced during construction at the AMOS site would be well within acceptable limits established by the Federal Highway Administration. There would be no significant noise-related impacts from operation of the BOLT experiment.

Land Use

The proposed modification to AMOS are consistent with the existing observation, tracking, communications, and scientific uses at the summit of Mount Haleakala. The AMOS facility is located on land leased by the U.S. Air Force from the University of Hawaii and is within a state-designated conservation use district; the proposed modifications are consistent with the existing lease and would require no additional state or local land use permits.

Visual Resources

Proposed modifications at AMOS would create only minor changes to the existing facility profile as viewed from national park facilities at the summit of Mount Haleakala. NO additions or modifications to external lighting or parking spaces are proposed.

Cultural Resources

Due to past construction disturbances, the absence of visible cultural remains, and the minimal nature of the proposed project, the proposed action at AMOS would not affect cultural resources. The proposed modifications to AMOS would have no effect on cultural resources within the existing Haleakala Historic District located in the National Park.

Socioeconomics

There would be no adverse impacts related to housing on Maui since there would be enough housing to adequately serve the minor influx of five temporary residents for two weeks to install equipment and three Aerospace Corporation employees to conduct the experiment for six weeks. Very minor beneficial impacts on employment are expected in Maui due to temporary construction jobs for the utility building.

Health and Safety

The laser beam which would be used for the BOLT experiment would be both eye-safe and skin-safe upon exit of the AMOS facility. Any possibility of interception of the laser beam by crews and passengers of aircraft would be minimal; safety procedures currently in use at AMOS would reduce potential health hazards to insignificant levels. The relatively small volumes of exhaust gas (5 standard cubic feet per meter) would be effectively scrubbed to remove potentially harmful acid components and then thoroughly diluted prior to discharge. There would be no significant health and safety impacts associated with the proposed project.

FINDINGS

Based upon the above, a Finding of No Significant Impact is made. An Environmental Assessment for the proposed action, dated March 1988, is on file at:

HQ Space Division/DEV
P.O. Box 92960
Los Angeles, CA 90009-2960
ATTENTION: Mr. Robert C. Mason