



Highlights of [GAO-07-430](#), a report to congressional committees

## Why GAO Did This Study

The Department of Defense (DOD) has spent about \$107 billion since the mid-1980s to develop a capability to destroy incoming ballistic missiles. DOD has set key decision points for deciding whether to further invest in capabilities to destroy missiles during the initial phases after launch. In March 2006, DOD issued a report on these capabilities in response to two mandates. To satisfy a direction from the House Appropriations Committee, GAO agreed to review the report.

To assist Congress in evaluating DOD's report and preparing for future decisions, GAO studied the extent to which DOD (1) analyzed technical and operational issues and (2) presented complete cost information. To do so, GAO assessed the report's methodology, explanation of assumptions and their effects on results, and whether DOD followed key principles for developing life-cycle costs.

## What GAO Recommends

To support future decisions, DOD should include key stakeholders in assessing operational issues, report on technical progress, and update and verify life-cycle cost estimates in accordance with key principles for developing life-cycle costs. In comments on a draft of this report, DOD agreed to include stakeholders and assess technical progress but did not agree to prepare or report life-cycle costs in accordance with key principles.

[www.gao.gov/cgi-bin/getrpt?GAO-07-430](http://www.gao.gov/cgi-bin/getrpt?GAO-07-430).  
To view the full product, including the scope and methodology, click on the link above. For more information, contact Janet A. St. Laurent at (202) 512-4402 or [stlaurentj@gao.gov](mailto:stlaurentj@gao.gov); or Paul Francis at (202) 512-2811 or [francisp@gao.gov](mailto:francisp@gao.gov).

# MISSILE DEFENSE

## Actions Needed to Improve Information for Supporting Future Key Decisions for Boost and Ascent Phase Elements

### What GAO Found

The report DOD's Missile Defense Agency (MDA) submitted to Congress in March 2006 included some useful technical and operational information on boost and ascent phase capabilities by describing these elements, listing upcoming decision points, and discussing geographic areas where boost and ascent elements could intercept missiles shortly after launch. However, the information in the report has several limitations because the analysis did not involve key DOD stakeholders such as the services and combatant commands in preparing the report and did not clearly explain modeling assumptions and their effects on results as required by relevant research standards. MDA's report states that, at this time, some data is limited, and operational concepts that discuss operations from forward locations have not been fully vetted with the services and combatant commands. However, the report did not explain how each element's performance may change if developing technologies do not perform as expected. Also, it did not address the challenges in establishing bases at the locations cited or provide information on the quantity of each element required for various deployment periods. Moving forward, DOD has an opportunity to involve stakeholders in analyzing operational and technical issues so that senior DOD and congressional leaders will have more complete information on which to base upcoming program decisions following key tests in 2008 and 2009 for the Kinetic Energy Interceptor and Airborne Laser boost and ascent phase programs.

MDA's report provided some cost estimates for developing and fielding boost and ascent phase capabilities, but these estimates have several limitations and will require refinement before they can serve as a basis for DOD and congressional decision makers to compare life-cycle costs for the elements. MDA's report states that there is uncertainty in estimating life-cycle costs because the elements are early in development. However, based on a comparison of the estimates in the report with key principles for developing life-cycle cost estimates, GAO found that MDA's estimates did not include all cost categories, including costs to establish and sustain operations at U.S. bases and at forward overseas operating locations. Also, MDA's estimates did not calculate costs based on realistic quantities of each element the combatant commanders or services would need to conduct the mission. Finally, MDA did not conduct a sensitivity analysis to assess the effect of key cost drivers on total costs. MDA officials stated that further analysis of the costs for each element along with measures to assess their confidence would help to better inform DOD and congressional decision makers in making investment decisions following key tests in 2008 and 2009.