

Highlights of [GAO-05-301](#), a report to congressional committees

Why GAO Did This Study

The Department of Defense (DOD) is embarking on a number of efforts to enhance warfighting and the way the department conducts business. Major investments are being made to develop improved weapon systems to combat various threats to U.S. security. While the weapons that DOD ultimately develops have no rival in superiority, weapon systems acquisition remains a long-standing high-risk area. GAO's reviews over the past 30 years have found consistent problems with weapon acquisitions such as cost increases, schedule delays, and performance shortfalls. In addition, DOD faces several budgetary challenges that underscore the need to deliver its new major weapon programs within estimated costs and to obtain the most from those investments. DOD can help resolve these problems by using a more knowledge-based approach for developing new weapons.

This report provides congressional and DOD decision makers with an independent, knowledge-based assessment of selected defense programs that identifies potential risks and needed actions when a program's projected attainment of knowledge diverges from the best practice. It can also highlight those programs that employ practices worthy of emulation by other programs. GAO plans to update and issue this report annually.

www.gao.gov/cgi-bin/getrpt?GAO-05-301.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Paul L. Francis at (202) 512-4841 or francisp@gao.gov.

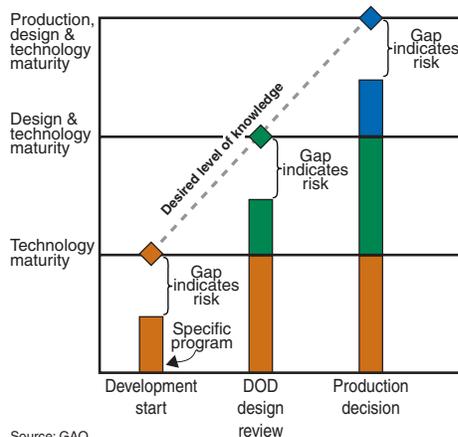
DEFENSE ACQUISITIONS

Assessments of Selected Major Weapon Programs

What GAO Found

GAO assessed 54 programs, which represent an investment of over \$800 billion, ranging from the Missile Defense Agency's Airborne Laser to the Army's Warfighter Information Network-Tactical. GAO's assessments are anchored in a knowledge-based approach to product development that reflects best practices of successful programs. This approach centers on attaining high levels of knowledge in three elements of a new product or weapon—technology, design, and production—at key consecutive junctures in development. If a program is not attaining these levels of knowledge, it incurs increased risk of technical problems, with significant potential cost and schedule growth implications (see figure). If a program is falling short in one element, like technology maturity, it is harder to attain the requisite amount of knowledge to prudently proceed in succeeding elements.

Attainment of Product Knowledge



The majority of programs GAO assessed are costing more and taking longer to develop than planned. Most of the programs proceeded with less knowledge at critical junctures than suggested by best practices, although some programs came close to meeting best practice standards. For example, technology and design for the F/A-22 matured late in the program contributing to large cost growth and schedule delays. The JASSM program, in contrast, has achieved a high level of knowledge at critical junctures while experiencing minimal cost increases or schedule delays.

Managing these levels of knowledge takes on additional significance as DOD's share of the discretionary budget faces increasing pressure from the growth in mandatory spending and the demands of ongoing military operations. For these reasons, if DOD approves programs with low levels of knowledge and accepts the attendant likely adverse cost and schedule consequences, it will probably get fewer quantities for the same investment or face difficult choices on which investments it cannot afford to pursue.