158353

GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-275841

March 17, 1997

The Honorable Sheila E. Widnall
The Secretary of the Air Force

Subject: Joint Direct Attack Munition: Low-Rate Initial Production Decision

Dear Madam Secretary:

During our review of the Joint Direct Attack Munition's (JDAM) readiness to begin low-rate initial production, JDAM officials told us that a contract for the initial production lot could be awarded as early as April 1997, before the Air Force concludes developmental testing or begins operational testing. We are concerned that the Air Force may make a premature commitment to significant production before clearly demonstrating, through operational testing, JDAM's key performance parameters. Experience has shown that committing to initial production before conducting adequate operational tests raises the risk that the system will need costly design changes during production or that the services will have to retrofit modifications to deployed weapons.[1]

The purpose of this letter is to indicate our concern and to request that the Air Force consider this issue and provide us answers to questions contained in this letter before signing a production contract or by April 18, 1997, whichever is earlier.

BACKGROUND

JDAM is a tailkit to be attached to the Mark 84, a 2,000-pound general purpose unitary bomb and the BLU-109, a 2,000-pound hard target penetrator bomb that are already in Air Force and Navy inventories. A slightly modified tailkit is expected to be produced later for the Mark 83, 1,000-pound bomb. JDAM

[1]Weapons Acquisition: Low-Rate Initial Production Used to Buy Weapon Systems Prematurely (GAO/NSIAD-95-18, Nov. 21, 1994).

converts these unguided free-fall bombs into precision guided, or smart, munitions. The tailkit uses global positioning system aided inertial navigation to provide accurate, autonomous delivery in adverse weather conditions. The services expect to deploy JDAM on a number of aircraft platforms, including the B-52H, B-1, B-2, F-22, F-16, F-15E, F-117A, F/A-18C/D, F/A-18E/F, and AV-8B. The operational flight program software of these aircraft has to be modified and, in some cases, hardware components added, to enable them to effectively use JDAM. The first aircraft to have operational software installed are expected to be the F/A-18 C/D, the B-52H, and the B-2. The services plan to buy about 87,500 kits at an estimated average cost of about $32,900 in then-year dollars.[2]

In July 1995, to provide JDAM earlier than originally planned, the Office of the Secretary of Defense approved acceleration of the initial production decision by 6 months and the full-rate production decision by 15 months. However, the developmental and operational test schedules were not accelerated.

According to JDAM's accelerated program schedule, the Air Force plans to make a decision to begin production in April 1997 and will exercise an option for the first low-rate production lot later that month. The criteria for the accelerated low-rate production decision are (1) a favorable operational assessment and (2) sufficient captive carry test hours[3] and guided test drops to determine that the 2,000-pound tailkit is on track to meet approved program baseline requirements. Baseline requirements involve six key performance parameters: (1) operation in adverse weather, (2) accurate delivery using global positioning system data, (3) the ability to switch from one target to another while in flight, (4) compatibility with available warheads such as the Mark-84, BLU-109, and Mark-83, (5) suitability for use on aircraft carriers, and (6) compatibility with aircraft designated to deliver the weapon.

DEVELOPMENTAL AND OPERATIONAL TESTING WILL NOT BE COMPLETE BEFORE LOW-RATE PRODUCTION DECISION

The developmental test plan calls for captive carry tests and guided test drops from three aircraft–the F/A-18C/D, the B-52H, and the F-16–before the April decision point. However, the operational software needed by the aircraft to

---

[2]We calculated this unit cost based on the current approved program baseline. The Program Manager's most current estimate is an average unit cost of $22,577.

[3]In captive carry tests, JDAM units are attached to the aircraft and flown through numerous bombing sequences, but not released from the aircraft. These tests are used for evaluating, among other things, JDAM's physical integration with the aircraft.

effectively use JDAM is not yet completely developed. The guided drops and other tests are being conducted with aircraft software that is still in development. The majority of flight testing to date has been with the F-16 aircraft--not one of the initial deployment platforms. Dedicated developmental tests with the F/A-18C/D and the B-52H are not scheduled to end until August 1997. Dedicated operational tests with these aircraft, scheduled to begin in September 1997, will not be completed until December 1997--about 8 months after the Air Force plans to contract for the first production lot and only about 90 days before possible approval for full-rate production and exercising an option for the second production lot. In addition, the Air Force expects to begin operational testing with the B-2 in July 1997, although the B-2 is not designated as an initial deployment aircraft for the JDAM.

According to an Air Force Operational Test and Evaluation Command official, an operational assessment has been completed for the program. Because operational tests have not been conducted, the assessment is based on data from early developmental tests.

LOW-RATE PRODUCTION QUANTITIES ARE NOT NEEDED FOR TESTS OR ESTABLISHING PRODUCTION BASE

The Department of Defense Regulation 5000.2R, governing major system acquisitions, states that the objective of low-rate initial production is to "produce the minimum quantity necessary to (1) provide production configured or representative articles for operational tests, (2) establish an initial production base for the system, and (3) permit an orderly increase in the production rate for the system sufficient to lead to full-rate production upon successful completion of operational testing."

The initial production of JDAMs does not appear to be consistent with these purposes. For example, the Air Force has already contracted for 630 production representative JDAMs--275 more than needed for operational testing. According to the Air Force, (1) the additional tactical units can be used to provide a wartime contingency or to provide additional units for testing with other aircraft; (2) by producing these units, the initial production base for the system will be established; and (3) the quantities now planned by the Air Force for lots 1 and 2 are much larger than the quantities originally planned. The Air Force indicated that the services plan to buy as many kits as the budget will allow--937 in fiscal year 1997 and 3,341 in fiscal year 1998 in contrast to an earlier plan to buy 425 units for lot 1 and 2,202 units for lot 2.

QUESTIONS

(1) In the absence of operational test results, how can the Air Force be sure that JDAM is operationally reliable and suitable and will not need major design changes after committing to production? What are the cost, schedule, and

performance risks of making the production decision before operational testing is done with the aircraft?

(2) How can the Air Force have confidence in the operational assessment without any operational test data and only limited developmental test data?

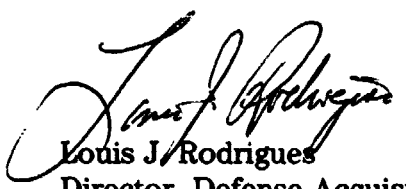
(3) Since none of the primary or test aircraft have a mature operational flight program that includes JDAM, how can the Air Force rely on the developmental test results? How can the Air Force determine a favorable operational assessment for the low-rate initial production decision based on data collected from the F-16, the F/A-18C/D, and the B-52H aircraft software test tapes?

(4) What impact would delaying the production decision until the services complete developmental and operational tests with the F/A-18C/D and the B-52H have on the JDAM production program?

— — — — —

We are sending copies of this letter to appropriate congressional committees; the Secretary of the Navy; the Under Secretary of Defense, Acquisition and Technology; and other interested parties. Your response to our questions will also be distributed to the same congressional committees. If you or your designee have any questions, please contact me at (202) 512-4841 or Lee Edwards, Assistant Director, at (205) 650-1411. Major contributors to this assignment were Carol Mebane and Dana Soloman.

Sincerely yours,



Louis J. Rodrigues
Director, Defense Acquisitions Issues

(707201)

Ordering Information

The first copy of each GAO report and testimony is free. Additional copies are $2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. VISA and MasterCard credit cards are accepted, also. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

Orders by mail:

U.S. General Accounting Office
P.O. Box 6015
Gaithersburg, MD 20884-6015

or visit:

Room 1100
700 4th St. NW (corner of 4th and G Sts. NW)
U.S. General Accounting Office
Washington, DC

Orders may also be placed by calling (202) 512-6000 or by using fax number (301) 258-4066, or TDD (301) 413-0006.

Each day, GAO issues a list of newly available reports and testimony. To receive facsimile copies of the daily list or any list from the past 30 days, please call (202) 512-6000 using a touchtone phone. A recorded menu will provide information on how to obtain these lists.

For information on how to access GAO reports on the INTERNET, send an e-mail message with "info" in the body to:

info@www.gao.gov

or visit GAO's World Wide Web Home Page at:

http://www.gao.gov

United States
General Accounting Office
Washington, D.C. 20548-0001

Bulk Rate
Postage & Fees Paid
GAO
Permit No. G100

Official Business
Penalty for Private Use $300

Address Correction Requested