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Status of the B-2 Bomber Program

Statement of
Frank C. Conahan
Assistant Comptroller General
National Security and International
Affairs Division

Before the
Defense Policy Panel
Committee on Armed Services
House of Representatives



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Mr. Chairman and Members of the Panel:

I am pleased to be here today to discuss the current status of the B-2 stealth bomber program. Today, in conjunction with this hearing, we are pleased to release an unclassified and updated report on the history and status of the B-2 program. In my testimony, I will briefly summarize our principal findings about the program, and offer some conclusions and observations drawn from our work.

THE B-2 BOMBER PROGRAM

The Air Force plans to procure a total of 133 B-2 aircraft: 6 development aircraft and 127 production aircraft. Through fiscal year 1990, the Congress has authorized production of the 6 development aircraft, and 10 production aircraft, and a total of \$26.8 billion has been appropriated for the program. The President's fiscal year 1991 budget requests \$5.3 billion for an additional five production aircraft, long-lead items for future aircraft, and continuing the development and testing programs.

One development aircraft has been delivered. Deliveries of the second and third aircraft are scheduled during the next year or so. Currently, the first aircraft is undergoing some planned modifications after completing some early air worthiness flight testing. Flight testing of this aircraft is scheduled to resume in April.

PROGRAM COST

In 1981 the Air Force estimated that the cost to procure 133 B-2s would be \$32.7 billion in 1981 dollars. In 1986 the Department of Defense announced the estimated cost would be \$36.6 billion in 1981 dollars, which was equivalent to \$58.2 billion in escalated dollars over the life of the B-2's procurement. A June 1989 program cost estimate, which is the most recent official total program estimate available, puts the cost for the 133 B-2s at \$70.2 billion. This estimate represents a net increase of \$12 billion over the 1986 estimate: \$18.2 billion in cost increases offset by \$6.2 billion in estimated savings from projected productivity improvements and multiyear procurement. We have been told that a revised cost estimate is being considered by the Office of the Secretary of Defense, which includes additional costs from such changes as increased inflation rates, and the cost of the recent strike at The Boeing Company. We estimate that the changes will add another several billion dollars to the B-2's estimated cost.

The principal causes for the cost increases to date have been an incomplete aircraft design at the start of manufacturing, underestimated material costs for composite aircraft, and production schedule extensions.

In early 1981, the Air Force modified its requirements to include a low-altitude capability for the B-2. This change forced Northrop to redesign its original B-2 airframe, adding additional control

surfaces and improved structures to accommodate the stresses of low-altitude high-speed flight. Northrop's redesign of the airframe also delayed its efforts to complete other aspects of the B-2 design. To meet its first flight deadline, the Air Force directed Northrop to begin manufacturing of the aircraft in 1986, even though the design was not completed. The incomplete B-2 design led to cost growth from significant increases in manufacturing labor hours, parts shortages, tooling problems, and the unintended and uneconomical transfer of manufacturing activities to the final B-2 assembly site.

The Air Force's earlier cost estimates were based on a cost estimating model drawn from experience in building aluminum airplanes. Even though efforts were made to adjust the estimate to reflect building with composites, the model produced an estimate that was significantly lower than the costs actually incurred. Manufacturing delays and other factors also caused significant schedule delays, which in turn increased development and production costs. The June 1989 cost estimate reflected a 3-year delay in the final aircraft deliveries compared to the 1986 estimate.

B-2 PROGRAM FLIGHT TESTING AND PRODUCTION SCHEDULE

The Air Force planned a 3,600-hour flight test program to demonstrate B-2 performance capabilities over approximately 4 years, which began with the first flight of the aircraft on July 17, 1989. To date, 1 percent of the flight hours in this test

program have been completed. Under the current schedule, the Air Force plans to complete development and initial operational testing in 1993. It now appears that the completion of testing could slip into 1994, as a result of delays in delivering the development aircraft.

The first 1-1/2 years of flight testing will be primarily to demonstrate basic flying qualities, and to provide preliminary data on the low observable features of the aircraft. The aircraft will not be flown approximately 6 months of this time, so additional planned modifications can be made. The pace of testing will increase as the remaining five development aircraft become available during 1990 and 1991. If current schedules are met, it will be at least 3 years before critical performance testing, including integrated offensive and defensive avionics, is completed. It has been during this critical performance testing that significant performance problems have been discovered in other advanced weapon system programs.

OBSERVATIONS

The B-2 program's cost and schedule remain uncertain. In addition, the current acquisition strategy requires funding of \$7.5 to \$8.0 billion for fiscal year 1992 through 1995. There has been much debate on whether the Department of Defense can realistically expect to receive these funding levels. Revisions to the program to accommodate more moderate annual funding levels will also result

in cost increases, unless the proposed production quantity is reduced.

The B-2 is a radically new aircraft design, and there is much uncertainty about whether its critical performance characteristics will be proven. Even in programs in which the aircraft design is more traditional, such as the B-1 bomber, significant problems persist, which require continuing investment of unanticipated resources. Under the current acquisition plan, 31 aircraft will be on order and over \$48 billion will be appropriated before anyone knows whether the B-2 will do its job.

We believe that it would be prudent to reduce the pace of funding and production for the B-2, to limit up-front investment until the critical performance elements of the aircraft are adequately evaluated.

Northrop Corporation officials have recently argued to us that an interruption in production funding would result in significant additional costs to maintain production capability for the future. Given the current production aircraft on order and the delivery schedule, which contemplates delivery dates for these aircraft several years hence, it is unclear when or how these costs would occur. Moreover, some level of increased cost may very well be warranted until such time as sufficient information on the B-2's

performance capabilities is available to support moving into full-scale production.

Given the continuing difficulties and uncertainties in the development of the aircraft, the changing world circumstances, and the questions raised about the feasibility of funding levels as high as the current program requires, the Secretary of Defense should provide the Congress with an analysis of practical and realistic alternatives for the future acquisition of this program. This analysis would form a more useful basis for budget action than the current program provides.

This concludes my prepared statement, Mr. Chairman. I will be happy to answer any questions you may have, to the extent possible in this open forum. In addition to the information provided in the unclassified report we issued today, we will be providing further details on certain performance and testing issues in a classified form. If your questions address issues that we believe to be classified, we will be pleased to provide answers at a later date in that form.